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THE CAROLINA JOURNAL OF PHARMACY

VOLUME 71 NUMBER 1 JANUARY 1991



Governor James Martin *(center)* signs the NC Pharmacy Week '90 proclamation witnessed by Tim Poe *(left)*, president, NCSHP, and J. Frank Burton, president, NCPhA.

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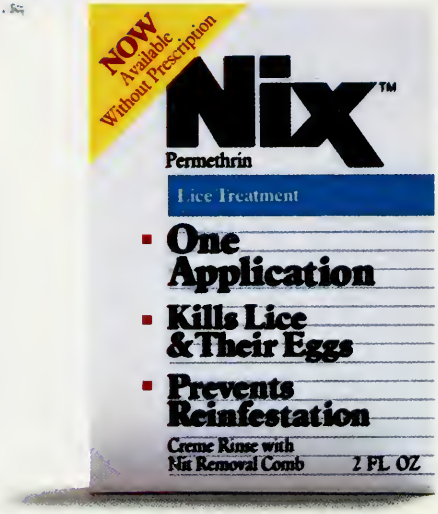
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Officers
NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

President
J. FRANK BURTON
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Vice Presidents
BETTY H. DENNIS
104 Calumet Court
Carrboro, NC 27510
919•962•0030

JOSEPH A. EDWARDS JR.
2025 St. Mary's Street
Raleigh, NC 27608
919•833•7558

HENRY L. SMITH
P.O. Box 147
Farmville, NC 27828
919•753•7111

Journal Staff

Editor
ALFRED H. MEBANE III

Managing Editor
KATHRYN K. JEFFERSON

Editorial Assistants
ERIE C. COCOLAS
TERRI M. LITTLE

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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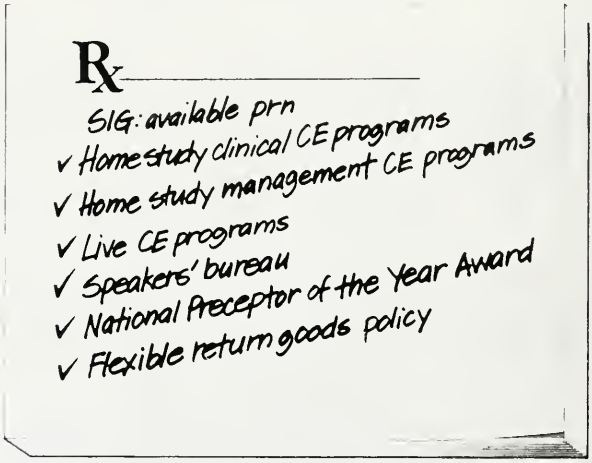
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THE PRESIDENT'S PAGE

J. Frank Burton
NCPhA President

"A New Year's Resolution"



By now, most of us have taken down the Christmas decorations and store them away in the attic until next year. Once again, we've eaten far more Christmas goodies than we should have, stayed up too late on New Year's Eve for "someone our age," watched endless hours of football and basketball on the tube during the holiday, and best of all, enjoyed a few extra days off from the rigors of "secundum artem."

But now that the General Assembly has resumed its business in Raleigh, it is time to, once again, take up the gauntlet and charge back into the battle that most pharmacy interest groups are constantly waging to protect their "turf." As more and more third parties cut their reimbursements to pharmacists, and mail order and physician dispensing continue to erode prescription volume from community pharmacy, we need to enlist a lot more "soldiers" in our army than are currently serving "active duty!" So as we begin this New Year of 1991, let us make at least one resolution that we do not break within a week: to take an active role in our local, state, and national pharmacy associations' efforts to protect and advance the profession of pharmacy.

This month's journal has two features which are very important to the resolution I have just asked you to make. The list of General Assembly members and their addresses is a valuable resource and should be kept handy and used promptly when you are asked to contact your representatives in the N.C. House and Senate. The accompanying article on how to communicate effectively with these legislators can be very useful in ensuring that we get the right message to the right people at the right time. The other feature that this journal offers is a list of NCPhA candidates for office with their biographical sketches, photos, and their responses to the question "What should NCPhA do to prepare its members for the 21st century?"

This is one of the most important elections in NCPhA's history and I urge you to study the candidates thoroughly. We feel we have an outstanding slate of very qualified people, all of whom have served the Association well in a variety of capacities prior to standing for these current offices. Those elected will be the first to serve under the new Executive Committee format adopted at the 1990 NCPhA Annual Meeting, and as such, will have the opportunity to become much more effective leaders of NCPhA than did most of their predecessors.

While we are busy wishing our friends, relatives, and customers/patients a happy and prosperous New Year, let's also resolve to make whatever effort is necessary to ensure that our own profession also enjoys 1991 as a year in which we win most of our battles with those forces that threaten our economic survival and professional prerogatives. •

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ELECTION '91
INTRODUCING THE NCPHA CANDIDATES FOR OFFICE

Ballots for the NCPhA's 1991 elections will soon be mailed to all Association members. You will notice a different composition of offices in the 1991 slate due to changes in NCPhA's Constitution and Bylaws approved during the 1990 Annual NCPhA Convention. Beginning with this election, the slate will consist of two candidates for one president-elect position and six candidates for three member-at-large positions on the NCPhA Executive Committee and eight candidates for four positions on the Board of Directors for the Pharmacy Foundation of North Carolina. (In prior elections, additional candidates for second and third vice president positions and only six candidates for three member-at-large positions for the Executive Committee comprised the election ballot.)

Of the candidates running for the six member-at-large positions, the two candidates who receive the greatest number of votes will be elected to a three-year term, the two candidates who receive the next greatest votes will be elected to a two-year term, and the next two candidates will be elected to a one-year term. In election years to follow, the terms of two members-at-large will expire annually.

Official ballots will be mailed to NCPhA members in late January and are to be returned to the NCPhA office within 30 days of receipt. The ballots will be counted by the Elections Committee in early March. Results of the election will be published in the April journal.

Successful candidates will be installed in their new offices at a banquet on Friday, May 24, 1991 during the 111th NCPhA Annual Convention in Winston-Salem.

The 1990-91 NCPhA Nominating Committee presents the following slate of officers which was approved by the membership at the 110th Annual NCPhA Convention in May 23-27, 1990.

Biographical data are presented for each candidate. Candidates running for positions on the NCPhA Executive Committee were asked to submit a response limited to 150 words or less on: *"What should NCPhA be doing to prepare its members for the 21st century?"*

Members of the 1990 Nominating Committee were: Chairman J. Frank Burton, Julian C. Baker, Sara J. Hackney, Jan D. Hirsch, William M. Oakley, Al J. Rachide, and Frank F. Yarborough.

FOR PRESIDENT-ELECT

(one to be elected)



Joseph A. Edwards Jr.
Edwards Pharmacy Inc.
203 Fayetteville St. Mall
Raleigh, NC 27601

Joseph A."Joey" Edwards Jr. is president of Edwards Pharmacy in Raleigh. In addition, he operates Edwards Management Company in Raleigh.

As a member of NCPhA for 17 years, Edwards has served the NCPhA in many capacities and is currently serving as second vice president of the Association and as a member of the Academy of Pharmacy. His past NCPhA positions include Executive Committee member-at-large, chairman of the Continuing Education Committee, chairman of the NC Pharmacy Tripartite Committee, chairman of PharmPAC, and chairman of the Convention Hospitality Committee.

He is a member and past president of the Wake County Pharmaceutical Association

and he was the 1976 Wake County Pharmacist-of-the-Year. Edwards is also a Practitioner-Instructor for the UNC School of Pharmacy and a past president of the UNC School of Pharmacy Alumni Association.

Edwards is also a member of NARD.

"The NCPhA was established to advance the profession of pharmacy in N.C. The present possibilities for expanding our role are limitless, and the NCPhA must take an aggressive stand in preparing its members for the future. This can be accomplished with a five-fold plan:

1) Develop and promote new areas of pharmacy practice, and change its attitude from reaction to action.
2) Strengthen its lobbying efforts with better organization, financial support and positive legislation.
3) Meet the needs of all of its members with special emphasis on employee pharmacists.
4) Establish a mechanism to develop new leaders in pharmacy through training programs and stronger ties with local pharmacy organizations.
5) Promote the importance of pharmacy to the public while teaching pharmacists to master the power of service and personal care.

The demands of the public will propel pharmacy into the future. The role of the NCPhA is to make that journey successful and positively focused."



Henry L. Smith
Carolina Medical Products Company
P.O. Box 147
Farmville, NC 27828

Henry Smith is the co-owner of Carolina Medical Products Company in Farmville.

Smith is a NCPhA Life Member and has been a member for 18 years. Smith has served on various NCPhA committees, including the Executive Committee as a member-at-large, and served as the executive secretary-treasurer for PharmPAC from 1978 to 1984. Currently, he serves as third vice president of the Association and as chairman of the Finance Committee. He is a past president of the Durham-Orange Pharmaceutical Association, a member of the Northeast Pharmaceutical Association and the Downeast Pharmaceutical Association, and a member of the Founders Committee for the Campbell University School of Pharmacy. In 1990, Smith was recognized by Campbell University as a Distinguished Alumni.

Smith is also a member of NCSHP, APhA, and ASHP.

"As we go into the last ten years of this century, there are many questions facing pharmacy. Some of these issues are the increased pricing of new prescription drugs, the problems with third party reimbursements, the questions of B.S. Pharm. vs. Pharm.D. degrees, continued involvement of pharmacy in the legislative process and the continued need for more continuing education programs. Even though these appear to be separate problems, they all impact and relate to one another.

It is very important for us to continue to encourage our peers to seek offices within their professional organizations as well as for all pharmacists to contact their legislators in matters relating to pharmacy. By doing so we can make the difference in what happens to our profession in the future. Each year the NCPhA works for the best reimbursement for Medicaid prescriptions by working to increase the fee and working to keep the discount from AWP as low as possible. In the future, this work will be increasingly important as we see a growth in the geriatric population and therefore more Medicaid and Medicare prescriptions.

Each year we are faced with the trend toward only Pharm.D. programs and degrees in the pharmacy schools throughout the country. I think the NCPhA will have to work toward a way of assuring that B.S. graduates

as well as Pharm.D. graduates maintain their places in the pharmacy profession. This may be accomplished (particularly for B.S. graduates) though more continuing education programs. The importance is to show that there is no difference in the competency between graduates of either program and possibly in the future we may see the Pharm.D. degree being offered to existing B.S. degree graduates through intensive continuing education programs.

It is, and will continue to be, vitally important that **all** pharmacists in the state become members of the NCPhA. Together we can work for meaningful C.E. programs and maintain our input into all issues that will impact on pharmacy and pharmacists."

FOR MEMBER-AT-LARGE

(six to be elected)



W. Robert "Rob" Bizzell
Realo Discount Drug
300 N. Queen Street
Kinston, NC 28501

Rob Bizzell is the owner of Realo Discount Drug store in Kinston and is a consultant pharmacist for the Lenoir County Health Department and Lenoir County Jail Clinic.

Bizzell has been a member of NCPhA for 14 years. He now serves as a member-at-large on the NCPhA Executive Committee. He is a past second vice president and third vice president of NCPhA, and a past Executive Committee member-at-large. He has served as chairman of the Legislative Committee and Resolutions Committee and he is a member of the NCPhA Academy of Pharmacy, the Academy of Consulting Pharmacists. He is also a member of NARD. He is the 1982 recipient of the NCPhA Don Blanton Award. He is a Fellow of the American College of Apothecaries and a NABPLEX item writer.

Locally, Bizzell is a past president of the Lenoir-Greene-Jones Pharmaceutical Society and past vice president of the Wayne County Pharmaceutical Society. He was the 1981 Lenoir County Pharmacist of the Year.

"Our profession is constantly undergoing changes, some for the better, some for the worst. The North Carolina Pharmaceutical Association has a responsibility to its members to prepare them to cope with these changes in the 21st century, whether it be to take advantage of them or to prevent them from adversely affecting us. We must be directed how to prevent problem situations from occurring, and not just rely on a 'knee jerk' reaction after they take place. This can be accomplished through proper education of the membership and showing them what to do. We must control our destiny and not allow anyone else to dictate to us how we can practice our profession. By making the membership aware of new developments and how to respond to them, we can be sure that the outlook for pharmacy in the 21st century is bright."



Sarah Beale Cobb
Merck Sharp & Dohme
180 West Hedgelawn Way
Southern Pines, NC 28387

Sarah Cobb is a medical sales representative for Merck Sharp & Dohme pharmaceutical company.

Cobb has been a member of the NCPhA for six years. She is currently a member-at-large on the NCPhA Executive Committee and has served as chairman of the Public & Professional Relations Committee. In 1989, she re-

ceived the North Carolina Distinguished Young Pharmacist-of-the Year award. She is a member of NCSHP and the UNC School of Pharmacy Alumni Association. On the local level, she has been a secretary of the Moore County Pharmaceutical Association. In addition, she is involved in civic activities in the Southern Pines community.

"In preparation for the 21st century, NCPhA needs to work *together* to address various issues that will affect every part of the pharmacy profession. NCPhA is unique in that it is the only organization in North Carolina that includes pharmacy school professors, retail and hospital pharmacists, pharmaceutical sales representatives, and various other pharmacy positions. We need input and support from *each* pharmacist in North Carolina in order to overcome the obstacles within our profession. The third party plans, physician dispensing, mail order prescriptions and managed health care are some of the most important issues that should be continually discussed and acted upon accordingly.

NCPhA needs to keep its members abreast of any potential changes in the pharmacy profession. Our organization must encourage its members to get involved in making the decisions on how NCPhA will support or attack certain key issues. NCPhA is the 'backbone' of our profession in North Carolina—we need *your* input. Each pharmacist's opinion is SIGNIFICANT!"



Sarah L. "Cindy" Dollar
P.O. Box 7401
Asheville, NC 28802

Cindy Dollar is a relief pharmacist at Whitley Drugs in Hendersonville and C.J. Harris Hospital in Sylva.

Dollar has been a NCPhA member for ten years. She has served on the NCPhA Public Health and Pharmacy Week Committees.

Locally, she has served as president of the Western Carolina Pharmaceutical Association.

"NCPhA should be keeping pharmacists informed of any legislative changes that affect pharmacists, including Medicaid or Medicare changes. It should help pharmacists stay current on other non-traditional (but not less valid) methods of self-treatment, such as naturopathy and homeopathy. The organization should also be a mouthpiece for pharmacists in promoting pharmacy within the state through its various committees. I would like to see NCPhA help to unify pharmacists regardless of affiliation (hospital, retail, public health, etc.) into a strong unified coalition."



Stephen C. "Steve" Dedrick
Duke University Medical Center
P.O. Box 3089
Durham, NC 27710

Steve Dedrick is the Associate Director of Pharmacy at Duke Medical Center.

Dedrick has been a member of the NCPhA for 18 years. He has served NCPhA as third vice president and member-at-large of the Executive Committee. He served as Chairman for the 1990 NCPhA Annual Convention and has served on the Constitution & Bylaws Committee and Policy and Procedures Task Force.

Dedrick is a member of ASHP, Durham-Orange Pharmaceutical Association, and NCSHP and is a past president of NCSHP. In 1988, he was honored by the NCSHP as Hospital Pharmacist of the Year. Dedrick is also chairman of the Committee on the Role

of Supportive Personnel in Pharmacy Practice, one of the committees of the newly formed NC Board of Pharmacy Task Force on Pharmacy.

"It is the responsibility of the NCPhA to represent the pharmacists of North Carolina in professional, political, academic, and economic circles. This means the responsibility for ensuring that these activities occur rests with the staff and elected officers of the NCPhA. It is your job as an NCPhA member to provide input to these people to give them direction in the discharge of their responsibilities. The NCPhA staff and officers must stay abreast of state and national trends and provide programs and other materials to keep pharmacists current in their practice and prepared for change. NCPhA must strive to integrate the pharmacists from all walks of pharmacy practice to ensure that any issue in practice, regardless of its origin or intent, can be debated within pharmacy ranks before we go to our publics. This approach will help us better understand the issues of our pharmacy colleagues and continue our strong public image."



W. Keith Elmore
Bellamy Drug Company
P.O. Drawer 3489
Wilmington, NC 28406

Keith Elmore is president of Bellamy Drug Company in Wilmington.

Elmore has been a member of NCPhA for 18 years. Currently, he serves on the NCPhA State Legislation Committee. He is past second vice president, third vice president, and member-at-large of the NCPhA Executive Committee. He has also served NCPhA on the following committees: Nominations, Community Pharmacy, Resolutions, Public Health, and Social & Economic Relations.

Elmore is a member of NCSHP and is serving as a member of the NC Board of Pharmacy's Task Force on Pharmacy.

"The economic and professional survival of North Carolina's pharmacists into the 21st century should be the primary goal of NCPhA. Survival depends on the profession's ability to demonstrate to the public, third party payers and the other health professions its value and role in an integrated health care system. To enhance this ability, NCPhA should:

1) Be pro-active in the development of a mission statement for pharmacy and a definition of the practice of pharmacy.
2) Try to develop ways to measure the effectiveness of both drug therapy and the pharmacist's role in the management of that therapy.
3) Help pharmacists integrate their practices with those of other health professionals.
4) Support the education of pharmacy students and pharmacists in the areas of biotechnology and health care economics.
5) Be an effective advocate for the profession in the legislative arena."



Jimmy S. Jackson
Kerr Drug Stores, Inc.
P.O. Box 61000
8380 Capitol Blvd.
Raleigh, NC 27661

Jimmy Jackson is Director of Pharmacy Services for Kerr Drug Stores, Inc. based in Raleigh.

Jackson has been a NCPhA member for 15 years. Presently, he is an advisor to the NCPhA State Legislation Committee and serves on

the Pharmacy in the 21st Century Commission. He has served on the following NCPhA committees: Nominations, Third Party, Continuing Education as chairman, and State Legislation as chairman. He is a past president of NC PharmPAC. In 1990, he received the Don Blanton Award from the NCPhA.

In addition to his NCPhA activities, Jackson serves as secretary of Pharmacy Network of N.C. and has served on its Executive Board since it began. He is a member of the NC Retail Merchants' Association and has served as chairman of its Drug Committee since 1988. He has participated in the NC Board of Pharmacy's Leaders' Forum since 1987.

On the national level, he is a member of NACDS and its State Government Affairs Committee and the Roche Chain Drug Advisory Board.

"To prepare the membership of the North Carolina Pharmaceutical Association for the changes that will occur to pharmacy in the 21st century, activities already begun, such as the Pharmacy in the 21st Century meeting sponsored by the Association and the committees formed as an offshoot, must continue. Each existing committee of the NCPhA should incorporate a 'Pharmacy in the 21st Century' component as one of its functions and the committee should forward its conclusions to the Pharmacy in the 21st Century (P21) NC Commission which will serve as a clearing house for these ideas. The P21 NC Commission, armed with input from the feeder committees, will be in a position to recommend policy and legislative changes, etc. which will assure our profession's viability in the future. The Association's existing committee system has served us well in the past and by utilizing this long range planning component will assure that we are prepared for the future."



Lori Tutterow Setzer
Revco Drug Store
1035 Yadkinville Road
Mocksville, NC 27028

Lori Setzer is a pharmacy supervisor for Revco Drug Stores.

She has been a member of the NCPhA for seven years. Setzer serves on the NCPhA Pharmacy Tripartite Committee and the Resolutions Committee. In the past, she has served NCPhA as chairman of N.C. Pharmacy Week, chairman of the Professional & Public Relations Committee, Community Pharmacy Committee, Nominating Committee and Resolutions Committee. She was honored by the NCPhA in 1987 as the N.C. Young Pharmacist of the Year.

She is also a member of the Northwest Pharmacists Association and has served the Association in various offices including president. She is a UNC Practitioner-Instructor and was the UNC-Syntex Practitioner-Instructor of the Year in 1987. On the national level, Setzer is a member of APhA and has served in the APhA House of Delegates for a number of years.

"Pharmacy in the 21st century will be full of challenges. NCPhA, as the major representative voice for the pharmacists in this state, must provide the resources necessary to meet these challenges. Improved patient care must be the goal of both the Association and its members. Only by improving the standard of care provided by our profession and public awareness of that care can we combat mail order, third party problems and the other issues facing pharmacy today. NCPhA must be charged with helping to develop a mission statement for pharmacy. The leadership of this Association must strive to unite the phar-

macists of this state into one voice. Only together can we accomplish our goals."



Daniel W. "Dan" Teat
Campbell University
School of Pharmacy
P.O. Box 1090
Buies Creek, NC 27506

Dan Teat is Director of Admissions and Continuing Education at the Campbell University School of Pharmacy in Buies Creek.

He has been a NCPhA member for four years. He is a current member and past chairman of the NCPhA Continuing Education Committee. He has also served on NCPhA's National Legislation Committee.

He is a member of NCSHP, Phi Lambda Sigma Pharmacy Leadership Society, Christian Pharmacists International, ASHP, and the American College of Apothecaries.

In 1990, he received the Continuing Excellence Award from the NCSHP.

"The 21st century will bring changes in our profession, there can be no question about that. What those changes will be is a matter of continual debate. We must, however, begin a process of greeting each other as colleagues, rather than competitors, so that we can discuss problems and control our destiny, rather than having it dictated to us by medicine, business or government.

NCPhA provides a focal point for us to share common dialogue and prepare for our professional future so that we can present a united front in pharmacy. We must call on our officers to represent our interests and present our professional desires and goals.

By electing individuals as officers who are willing to be aggressive and assertive in representing pharmacy, NCPhA can better serve its members to prepare them for the 21st century."



Thomas R. "Tom" Thutt
Medical Center Pharmacy
905 N. Queen Street
Kinston, NC 28501

Tom Thutt is the owner of Medical Center Pharmacy in Kinston.

Thutt has been a member of the NCPhA for 17 years. At the present time, Thutt is serving the Association on the Third Party Committee. He is also a member of the Academy of Pharmacy. He is past chairman of the Continuing Education Committee and Ethics Committee and has also served on the Nominations, Time & Place, Third Party, and the Pharmacy Tripartite Committee and the PRN Task Force.

He is a member and past president of the Down East Pharmacy Society and a member of NARD. Thutt is a UNC Practitioner-Instructor. In 1987, he was chosen as the UNC-Syntex Practitioner-Instructor of the Year. He was the recipient of the 1990 Merck-NARD Demonstration Project Grant in Community Pharmacy.

"The NCPhA can impact positively on its membership by addressing head-on the B.S.–Pharm.D. degree debate and by establishing protocols for the transition period, which will extend well into the 21st century. Working with the Academy of Pharmacy and with relevant committees of the Association, criteria could be established whereby B.S. pharmacists could earn a Pharm.D., not merely grandfathered. The inestimable value of experience must be countered with the need for constant education as technology changes our workplace daily.

The committee structure of the NCPhA provides an excellent base from which to develop guidelines for B.S.–Pharm.D. transition and these committees should be actively involved. With proper guidance, both B.S. and Pharm.D. graduates can maintain their dignity, develop their potential and join together to offer the community the best possible mix of professionals."



Laura McLeod Vance
Winston-Salem Health Care Pharmacy
250 Charlois Boulevard
Winston-Salem, NC 27103

Laura Vance is a pharmacist at Winston-Salem Health Care Pharmacy.

She has been a NCPhA member for eight years. Vance is currently a member of *The Carolina Journal of Pharmacy* Editorial Advisory Board. In previous years, she served NCPhA as a member-at-large of the Executive Committee. In 1988, she was honored as the N.C. Young Pharmacist-of-the-Year.

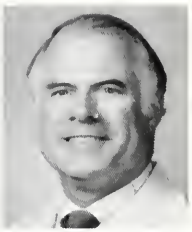
She is a member and past president and founding member of the Northwest Pharmacists Association. She is a member of the American Society of Consultant Pharmacists and APhA. She has served in the APhA House of Delegates for a number of years.

"I look at pharmacy in the 21st century with great optimism. I believe there will be many changes that will take place in the next few decades. These include an increasing older population, more Rx to OTC medications, higher drug and health care costs, cost-effective controls for those costs, and more patient self care. I think the average health care consumer will be more sophisticated and will expect more information and services from their pharmacists. Biotechnology will significantly affect the types of medication we will dispense.

Our state association can take an active role in preparing us for the century ahead by implementing the following:

1) encouraging active membership in the Association, especially in committee work and participation in sponsored seminars.
2) offering educational opportunities in cost effective strategies (e.g., via the Annual Socio-Economic Seminar) and in home health care information.
3) fostering cooperation and working with other health care professionals so we can continue to be an integral part of the health care delivery system; also, this will maintain control over our own professional activities within this system. Whatever services and technology we do not accept responsibility for will surely be done by others. This will erode our professional stature and the necessity for our role in the eyes of the health care purchaser.
4) helping link practicing pharmacists and pharmacy schools together to maintain our knowledge base on the 'cutting edge.' Post graduate education will be necessary as health care and pharmacy become more sophisticated.

These are just a few suggestions. Alone, we may not all successfully make the leap into the 21st century, but together as an active pharmacy association, we can eagerly embrace the year 2000 and what it brings with the knowledge, we *are* prepared!"



Mitchell W. "Mickey" Watts
Medical Center Pharmacy
P.O. Box 39
Concord, NC 28026

Mickey Watts is the owner of Medical Center Pharmacy in Concord.

He is a NCPhA Life Member and has been a member of NCPhA for 26 years. Watts is a past chairman of the NCPhA Employee/Employer Relations Committee and has served on the following additional committees: Third Party, Nominations, Mental Health, and Community Pharmacy. He is also a member of NCPhA's Academy of Pharmacy and has represented NCPhA on the Board of Directors of the Pharmacy Foundation of N.C. He has been honored by NCPhA as a recipient of the Don Blanton Award.

He is a past president of the Cabarrus County (Piedmont) Pharmaceutical Society and past president of the Mecklenburg County Pharmaceutical Society. He is also a past president, incorporator, and chairman of the Board of Directors of the Pharmacy Network of N.C. He is a member of APhA and NARD.

"NCPhA must continue to make the membership aware of the importance of unity between staff, institutional, independent and academia pharmacists. United and together we can be a strong force with our legislators, which is ever so important because they play a big role in our destiny. The issues of mail order, third party reimbursement, etc. are not going away; therefore, we have to be active in politics and we must have this strong unity to be effective.

Our ever increasing elderly population and new high tech drugs and high tech drug delivery systems will make major impacts on pharmacy as we know it today and the Association must help in guiding us and keeping us abreast of these changes.

NCPhA must encourage the young pharmacists and especially our women pharmacists to join our efforts. To get them, I think NCPhA must be ever flexible to the needs and thinking of these pharmacists. Remember: 'Even one person can make a difference.'"



Robert W. Worley
O'Berry Center Pharmacy
Highway 581
Goldsboro, NC 27530

Robert Worley is a pharmacist at O'Berry Center Pharmacy. He is the former manager and partner of Goldsboro Drug Company.

Worley is a NCPhA Life Member and has been a member of NCPhA for 19 years. Currently, Worley is serving as a member-at-large of the NCPhA Executive Committee. He is a past third vice president of the NCPhA Executive Committee. He has served on other NCPhA committees—Mental Health and Community Pharmacy and served as chairman of the latter.

On the local level, Worley belongs to the Wayne County Pharmaceutical Society.

"The 21st century will see many changes in the delivery of pharmaceutical services. The effectiveness of the NCPhA can have a vital impact on these changes. There are many functions of the Association including continuing education, employment assistance, scholarship and loan fund management, and discounted insurance services. One of the most important functions is legislation. Not only must the Association be vigilant and responsive to legislative events, it must also be pro-active in developing and securing the passage of new legislation. This can be ac-

complished by continuing to develop good leadership and an informed membership. An informed membership that is active in the Association is its strength. Getting members involved and listening to their ideas will improve the effectiveness of the Association. We must be effective if the pharmacists of the 21st century are to deliver superior pharmaceutical services to the citizens of North Carolina. I encourage every pharmacist to be involved in this effort.

BOARD OF DIRECTORS PHARMACY FOUNDATION OF N.C.

(four to be elected)



William H. "Bill" Edmondson
Glaxo Inc.
Five Moore Drive
Research Triangle Park, NC 27709

Bill Edmondson is vice president of Government and Professional Relations for Glaxo Inc.

He has been a NCPhA member for 11 years. Edmondson is currently serving as chairman of the Pharmacy in the 21st Century-NC Commission. He has served on the NCPhA National Legislation and State Legislation Committees and as chairman of the latter. He has served as an NCPhA Annual Convention chairman. He has represented NCPhA in the APhA House of Delegates and has been an annual participant in the NC Board of Pharmacy Leaders' Forum.

He is a member of NCSHP, APhA, ASHP, NARD, NACDS, and many other national pharmacy organizations.



Pamela U. "Pam" Joyner
Wake Area Health Education Center
P.O. Box 14465
Raleigh, NC

Pam Joyner is the Director of Pharmacy Education for the Wake AHEC.

She has been a NCPhA member for 15 years. She has participated on many NCPhA committees—Executive Committee, Continuing Education, Nominations, Social and Economic Relations, and Public and Professional Relations. She is a member of the Academy of Pharmacy.

She is a member and past president of NCSHP and a member of ASHP and AACP. Joyner is a past recipient of the NCSHP Continuing Excellence Recognition Award. She is also a past president of the Wake County Pharmaceutical Association and former Wake County Pharmacist-of-the-Year.

Joyner is currently serving on the Board of Directors of the Pharmacy Foundation of N.C.



William Whitaker "Whit" Moose
Moose Drug Company
101 W. Franklin St.
Mt. Pleasant, NC 28124

Whit Moose is the owner of Moose Drug Company.

He is a NCPhA Life Member and has been

a member of NCPhA for 29 years. Moose is a past president of NCPhA and was the 1990 N.C. Pharmacist-of-the-Year. He is a past recipient of the Bowl of Hygeia Award.

He is a past president of the NC Board of Pharmacy and past president of the Cabarrus County Pharmaceutical Society. He is member of APhA and NARD.



Linda T. Taylor
Crossnore Drug Store
Crossnore, NC 28616

Linda Taylor is the owner of Crossnore Drug Store.

She has been a NCPhA member for 13 years. She has served on the Board of Directors for the UNC Pharmacy Alumni Association and served as its president in 1988.



W. Artemus "Teamie" West
Tart and West Druggists
110 W. Roseboro St.
Roseboro, NC 28382

Teamie West is the owner of Tart and West Druggists.

He has been a member of NCPhA for 40 years. He is a past president of NCPhA and has served NCPhA in many capacities. He is a past president of the Cape Fear Pharmaceutical Society. He is a member of APhA and NARD. He is currently serving on the Board of Directors of the UNC Pharmacy Foundation of N.C.



T. Steve Wilson
Guilford College Thrift Drugs
5603 W. Friendly Ave.
Greensboro, NC 27410

Steve Wilson is president of Guilford College Thrift Drugs and president of Wilson Medical Sales and Rentals.

He has been a NCPhA member for 19 years. He was a NCPhA representative for the House of Delegates at the 1990 NARD Annual Meeting. He has also served on the NARD Committee for Medical Appliances and Devices. He was recognized as the 1989 UNC-Syntex Practitioner-Instructor of the Year and the 1989 NARD Preceptor-Instructor of the Year. He has been a member of the Advisory Board for the UNC School of Pharmacy. •

RETAIN THIS IMPORTANT INFORMATION ABOUT YOUR NCPHA CANDIDATES SO THAT YOU CAN REFER TO IT WHEN YOUR BALLOT ARRIVES IN THE MAIL.

WOMAN'S AUXILIARY
PRESIDENT'S MID-YEAR REPORT

Thus far, this has been a very exciting and busy year. It has been enjoyable being able to be associated with our fellow auxiliary members and the pharmacy profession. I really appreciate your support.

The Executive Board of the Woman's Auxiliary has approved to continue supporting Mission Air and the Vial of Life. Some of the funds received from our fund-raising projects have been approved to be used to redecorate the auditorium at the Institute of Pharmacy in Chapel Hill. The Ways and Means Committee will have for sale collector's plates of the NCPhA Coat of Arms. I'm looking forward to being one of the first purchasers of these plates.

The 1990 Mortar-and-Pestle Award dinner and program honoring the N.C. Pharmacist-of-the-Year, Whitaker Moose of Mount Pleasant, was held on July 27, 1990. It was interesting to hear about the life of this distinguished pharmacist. The Woman's Auxiliary congratulates Whit on receiving this well-deserved award.

On August 30, 1990, I had the honor of attending the Campbell University School of Pharmacy Convocation and making a few remarks at the luncheon. This presented a good opportunity to report what our Auxiliary is doing and to explain the literacy poster that was distributed to all the pharmacies in the state.



President Mary Lou Worley

Work is still being done to organize a Wayne County Pharmaceutical Auxiliary. Although we are not yet formally organized, we have had three meetings and there still seems to be interest in this organization. We hope to elect officers in January.



The annual Fall Convocation was held on October 10, 1990 at the Institute of Pharmacy. Our morning began with delicious refreshments and coffee provided by our Hospitality Committee. Mrs. Peggy Eckel welcomed everyone to beautiful Chapel Hill. An inspirational devotion was given by Ruby Creech. Rebecca Work had the Roll Call. We were pleased with the number present, considering the busy schedule we know that all of our members maintain. Al Mebane, executive director of the NCPhA, introduced our guests who brought greetings from their various organizations: George H. Cocolas, associate dean of the UNC School of Pharmacy; Ronald W. Maddox, dean of Campbell University School of Pharmacy; Frank Burton, president of the NCPhA; and Dick Hoffman, president of the Traveling Members' Auxiliary. Committee reports were then given by each chairperson.

Our distinguished auxiliary member, Vivia Creech, introduced our guest speaker, Dr. Jane Vella, president of Jubilee Popular Education Center. Her topic, "Women's Ways of Knowing," emphasized how we can listen to learners/patients/clients as they deal in "constructed knowledge" and how we can improve our self-image by taking part and sharing with others which was consistent with our theme "Cultivating the Seeds of Literacy." Dr. Vella also brought as her guest Ms. Rula Quemei from Amman, Jordan. We all enjoyed hearing of their experiences abroad.

We were delighted to have as our guests some of our scholarship recipients. We are extremely proud of each of them and of their hard work in order to receive these scholarships.

After our business session, we enjoyed the trolley ride to the Morehead House where we were provided lunch by The Catering Company. Margaret Boyd gave the blessing. The entertainment was presented by our own Auxiliary members, the "PRN Stat Singers": Peggy Jackson, Betsy Mebane, Betty Jane Upchurch, Neta Whaley, Jerry White, Anne Woodard, and Mary Good. We are so proud of our talented members. By the end of the luncheon we were all "Ballin' the Jack!" After lunch, we were privileged to tour the Morehead House. Thanks to all in making this such a successful Convocation. It was greatly enjoyed by all.

December 8 was an exciting day for Campbell University School of Pharmacy. I was delighted to be invited to the groundbreaking ceremonies of the new addition to the School of Pharmacy. We are proud of Campbell's School of Pharmacy and wish them the best of luck in all their endeavors.

I am looking forward to the remainder of my term in office as president of the Woman's Auxiliary.

Wishing you a Happy and Prosperous New Year,

Mary Lou Worley, President
Woman's Auxiliary of the NCPhA



Left: Dr. Jane Vella, presents "Women's Ways of Knowing" to Woman's Auxiliary members and invited guests during the group's Annual Fall Convocation at the Institute of Pharmacy.

Previous page, bottom: The "PRN Stat Singers," standing from left, Betty Jane Upchurch, Peggy Jackson, Betsy Mebane, Neta Whaley, and Jerry White, entertain Woman's Auxiliary members following lunch at the Morehead House. Musical accompaniment was provided by Anne Woodard; Mary Good presided as M.C.; Jerry White also wrote and directed the musical program.

COMMUNICATING EFFECTIVELY

WRITE YOUR LEGISLATOR—HERE'S HOW

Communicating with your elected legislators in Washington, Raleigh and your home town is one of the most important contributions you can make to the political process. Writing to your legislator is an economical and effective way to make your views known at all levels of government—federal, state, or city/county. They all want to know what you think on a subject of importance to you. Legislators need to hear your views because they don't know everything about any given subject; they depend on their constituents and staff to give them the information. They also need to hear your views so they can make better decisions and accurately represent you.

Writing to your legislators is easy. Here are a few helpful hints on how to write an effective letter to your legislators:

1. Address your letter properly.

(Refer to the legislative directory beginning on page 23.)

For the U.S. Congress:

The Honorable John Doe
United States Senate
Washington DC 20515

Dear Senator Doe:

The Honorable John Doe
House of Representatives
Washington DC 20510

Dear Representative Doe:

For the N.C General Assembly:

The Honorable John Doe
N.C. General Assembly
West Jones St.
Raleigh NC 27611

Dear Senator Doe:
Dear Representative Doe:

For Local Offices:

Consult your local telephone book.

2. Identify yourself.

Be sure to mention the state, congressional, or legislative district, or city or county in which you are a voter. Be sure your return address is on the letter, not just the envelope.

3. Be specific and brief.

When writing about legislation, always use the bill number or the title, if possible. Briefly describe the issue that concerns you and the professional or other capacity through which you have an interest in the issue. Stick to ONE topic.

4. Explain your position.

Tell how the bill will affect you and the legislator's constituency. Always be truthful. Be reasonable. Don't threaten.

5. Ask for a response.

Urge your legislator to take action—support or oppose a bill, cosponsor, offer an amendment, or whatever action you would like taken. Request (don't demand) a reply to your letter.

DO let NCPhA know who you are writing and what you are saying. Please send NCPhA a copy of your letter so that we can keep our full-time lobbyist in Raleigh and our other legislative contacts informed!

WITH YOUR LEGISLATOR

CALL YOUR LEGISLATOR—HERE'S HOW

Most of the time, letter writing is the preferred method of communicating with your legislator. On occasion, however, telephoning your legislator may be more appropriate and more effective.

Calling your legislators is easy. Here are a few helpful hints on when and how to call your legislators and what to say when you do call them.

1. Phone calls are appropriate:

- When time is of the essence.
- When a personal touch is needed.
- When you need to know a member's stand on an issue and why.
- When a response to a letter has been unsatisfactory in that the member has not clearly understood what action you want taken.
- When a vote is about to be taken.

2. What to say:

Follow steps 2–5 on the preceding page.

3. To call your legislator:

For the U.S. Congress:

U.S. Congress Switchboard
(202) 224-3121

For the N.C. General Assembly:

Raleigh Legislative Telephone Center
(919) 733-4111

(See also the telephone numbers for N.C. General Assembly Members beginning on page 23.)

For Local Offices:

Consult your local telephone book.

The N.C. General Assembly convenes on:

January 30, 1991

The U.S. Congress convenes on:

January 23, 1991

KNOW THE '91 LEGISLATIVE ISSUES

Improve Your Legislative Awareness and Readiness

NCPhA and our Washington affiliates will address the following legislative issues relative to pharmacy in 1991. Even though NCPhA has a full-time lobbyist in Raleigh and lobbying representatives in Washington, some legislative issues may require a show of strength by pharmacists through organized letter writing or telephone campaigns. You can be helpful to your profession by being informed about these legislative issues as you may be called upon to promote pharmacy's interests to your legislators.

STATE

- Seek freedom of choice legislation regarding third party plans to ensure the public's access to the pharmacy of their choice.
- Propose a fee structure for licensure permits for medical devices.
- Guard against the further spread of mail order pharmacy.
- Endorse the implementation of the new Wholesale Drug Distributor Licensing Act of 1991.
- Protect and improve Medicaid prescription reimbursement.
- Prevent mandated multiple prescription forms for controlled substances.
- Seek legislation for physician, nurse, and physician assistant dispensing permits.
- Continue to advocate pharmacists' right to perform cholesterol screening and other screening tests.

FEDERAL

- Prevent mandated multiple prescription forms for controlled substances.
- Protect and improve Medicaid prescription reimbursement.
- Pursue methods of reducing the responsibility of pharmacists with regard to filing claims under the Medicare program, specifically DUE claims.
- Monitor the implementation of the new Medicaid provisions of the Omnibus Budget Reconciliation Act of 1990 and make recommendations regarding the implementation of this Act, specifically electronic claims management, drug use review, grants, and prescription reimbursement.
- Prevent FDA approval of drugs with restrictive distribution systems.
- Continue to guard against unwarranted polygraph tests to protect pharmacists.
- Monitor FDA policies regarding compounding.
- Continue to advocate pharmacists' right to perform cholesterol screening and other screening tests.
- Continue to seek an end to multitier pricing practices by pharmaceutical manufacturers.
- Encourage legislation that prevents corruption in the drug approval process, including reforms in the federal Food, Drug, and Cosmetic Act of 1938.
- Advocate research and development for new types of child-resistant packaging by the Consumer Product Safety Commission to reduce carpal tunnel syndrome in pharmacists.

1991 NORTH CAROLINA GENERAL ASSEMBLY

The following directory contains a listing of the 1991 N.C. General Assembly and the N.C. Congressional Delegation. Please save this journal for reference as you may be called upon to write or call your legislator to promote issues of concern to pharmacy.

Senate

District # 1
Marc Basnight
P.O. Box 1025
Manteo 27954
919-473-2223

District # 2
Frank W. Ballance Jr.
P.O. Box 616
Warrenton 27589
919-257-3955

District # 3
Beverly Perdue
P.O. Box 991
New Bern 28563
919-633-2670

District # 4
B. Tommy Pollard
1 Pollard Ln.
Jacksonville 28540
919-455-3180

District # 5
Wendell Murphy
P.O. Box 280
Rose Hill 28458
919-289-2970

District # 6
R. L. Martin
P.O. Box 387
Bethel 27812
919-825-4361

District # 7
Franklin Block
520 Princess St.
Wilmington 28401
919-799-2404

District # 8
Henson P. Barnes
P.O. Drawer 7
Goldsboro 27530
919-735-3518

District # 9
Ed N. Warren
227 Country Club Dr.
Greenville 27835
919-756-2671

District #10
James Ezzell Jr.
P.O. Box 8225
Rocky Mount 27804-1225
919-443-3934

District # 11
James Speed
Rt. 6, Box 542
Louisburg 27549
919-853-2167

District # 12
Lura Tally
3100 Tallywood Dr.
Fayetteville 28303
919-484-4868

Joseph Raynor
345 Winslow St.
Fayetteville 28301
919-486-6931

District # 13
Ralph Hunt
1005 Crete St.
Durham 27707
919-682-5259

Kenneth C. Royall Jr.
P.O. Box 51218
Durham 27717-1218
919-489-2129

District # 14
Joseph Johnson
P.O. Box 31507
Raleigh 27622
919-833-3354

J. K. Sherron Jr.
4208 Six Forks Rd., Ste. 302
Raleigh 27609
919-881-0070

William Staton
P.O. Box 1320
Sanford 27330
919-775-5591

District # 15
Leo Daughtry
141 North 2nd St.
Smithfield 27577
919-934-7265

District # 16
Howard N. Lee
P.O. Box 25453
Raleigh 27611
919-942-6528

Russell Walker
1004 Westmont Dr.
Asheboro 27203
919-625-2574

District # 17
Richard Conder
P.O. Box 1627
Rockingham 28379
919-895-9747

Senate

Aaron Plyler
2170 Concord Ave.
Monroe 28110
704-283-8616

District # 18
R. C. Soles Jr.
P.O. Box 6
Tabor City 28463
919-653-3948

District # 19
Robert Shaw
P.O. Box 8101
Greensboro 27419
919-855-7533

District # 20
"Ted" Kaplan
1001 Dalton Rd.
Lewisville 27023
919-945-2337

Marvin Ward
641 Yorkshire Rd.
Winston-Salem 27106
919-724-9104

District # 21
George Daniel
P.O. Box 0
Yanceyville 27379-1108
919-234-8911

District # 22
Fletcher Hartsell Jr.
129 Overview Dr., NE
Concord 28025
704-786-8608

District # 23
Betsy Cochrane
Box 517 BR
Advance 27006
919-998-8893

Paul Smith
P.O. Box 916
Salisbury 28145
704-633-8448

District # 24
William Goldston Jr.
P.O. Box 307
Eden 27288
919-627-7634

A. P. Sands III
P.O. Box 449
Reidsville 27323-0449
919-349-5548

District #25
Helen Marvin
119 Ridge Ln.
Gastonia 28054
704-864-2757

John Carter
Route 4, Box 944
Lincolnton 28092
704-735-3861

James Forrester
P.O. Box 459
Stanly 28164
704-263-8603

District # 26
Austin M. Allran
Box 2907
Hickory 28603
704-327-2632

Howard Bryan
P.O. Box 1654
Statesville 28677
704-872-9000

District # 27
Donald Kincaid
P.O. Box 988
Lenoir 28645
704-758-8521

Daniel Simpson
P.O. Drawer 1329
Morganton 28655
704-584-2855

District # 28
Herbert L. Hyde
P.O. Box 7266
Asheville 28802
704-667-1046

Dennis Winner
Erwin & Winner
81-B Central Ave.
Asheville 28801
704-298-3477

District #29
Clark Plexico
P.O. Box 1904
Hendersonville 28793
704-696-9435

Robert Carpenter
180 Georgia Rd.
Franklin 28734
704-524-5009

District #30
David Parnell
P.O. Box 100
Parkton 28371
919-858-3508

District #31
William Martin
P.O. Box 21363
Greensboro 27420
919-373-8405

District #32
Mary Seymour
1105 Pender Ln.
Greensboro 27408
919-288-5631

District # 33
James Richardson
1739 Northbrook Dr.
Charlotte 28216
704-399-1555

Senate

District # 34
"Fountain" Odom
1100 South Tryon St.
Charlotte 28203
704-588-1560

District # 35
J. G. "Jerry" Blackmon
2019 Queens Rd., E
Charlotte 28207

House of Representatives

District # 1
Vernon G. James
Rt 4, Box 251
Elizabeth City 27509
919-330-4394

R. M. "Pete" Thompson
P.O. Box 351
Edenton 27932
919-482-2226

District # 2
Howard B. Chapin
212 Smaw Rd.
Washington 27889
919-946-3480

District # 3
Gerald L. Anderson
P.O. Box 1546
New Bern 28560
919-633-1456

Daniel T. Lilly
P.O. Box 824
Kinston 28502
919-523-4309

William Wainwright
RFD 1, Box 169H
Havelock 28532
919-447-7379

District # 4
Bruce Ethridge
715 Ann St.
Beaufort 28516
919-728-5526

Ronnie Smith
P.O. Box 3091
Atlantic Beach 28512
919-726-7933

Robert Grady
107 Jean Cir.
Jacksonville 28540
919-455-9359

District # 5
Howard J. Hunter
P.O. Box 418
Conway 27820
919-585-0683

District # 6
Richard E. "Gene" Rogers
908 Woodlawn Dr.
Williamston 27892
919-792-4245

District # 7
Thomas C. Hardaway
P.O. Box 155
Enfield 27823
919-445-2371

District # 8
Josephus L. "Joe" Mavretic
P.O. Box 100
Crisp 27852
919-827-5797

District # 9
Walter B. Jones Jr.
P.O. Box 686
Farmville 27828
919-753-2549

Charles McLawhorn
3725 S. Memorial Dr.
Greenville 28590
919-355-4001

District # 10
C. W. "Charlie" Albertson
Rt 2, Box 141E
Beulaville 28590
919-298-4923

District # 11
John H. Kerr III
P.O. Box 1616
Goldsboro 28530
919-734-1841

Carolyn Russell
304 Glen Oak Dr.
Goldsboro 27534
919-736-2665

District # 12
Edward C. Bowen
Rt 1, Box 289
Harrells 28444
919-532-4183

Edd Nye
409 Woodland Dr.
Elizabethtown 28337
919-862-2420

Harry E. Payne Jr.
P.O. Box 1147
Wilmington 28402
919-256-9668

District # 13
Karen Gottovi
116 Martingale Ln.
Wilmington 28409
919-350-0190

District # 14
E. David Redwine
P.O. Box 283
Shallotte 28459
919-579-2169

District # 15
Leo Mercer
115 Miller St.
Chadbourn 28431
919-654-3084

House of Representatives

District # 16
Daniel H. DeVane
P.O. Drawer 500
Raeford 28376

Adolph Dial
Rt 2, Box 295
Pembroke 28372

John C. "Pete" Hasty
P.O. Box 945
Maxton 28364
919-844-5965

District # 17
Luther R. "Nick" Jeralds
319 Jasper St.
Fayetteville 28301
919-488-3542

Mary E. McAllister
1506 Edgecombe Ave.
Fayetteville 28301

District # 18
R. D. "Don" Beard
2918 Skye Dr.
Fayetteville 28303
919-484-9935

John W. "Bill" Hurley
P.O. Box 714
Fayetteville 28302
919-483-6210

Edward A. "Alex" Warner
3610 Frierson St.
Hope Mills 28348
919-424-0030

District # 19
Clarence "C. P." Stewart
Rt 3, Box 718
Lillington 27546
919-893-8966

Dennis A. Wicker
P.O. Box 309
Sanford 27330
919-775-7119

District #20
Barney Paul Woodard
P.O. Box 5
Princeton 27569
919-936-6641

Billy L. Creech
P. O. Box 149
Wilson Mills 27593
919-934-3847

District # 21
Daniel T. Blue
P.O. Box 1730
Raleigh 27602
919-833-1931

District # 22
John T. Church
420 Woodland Rd.
Henderson 27536
919-438-5368

James W. Crawford Jr.
509 College St.
Oxford 27565
919-693-6119

James P. Green Sr., MD
P.O. Box 1739
Oxford 27536
919-492-2161

District # 23
H. M. "Mickey" Michaux Jr.
P.O. Box 2152
Durham 27702
919-596-8181

George W. Miller Jr
3862 Somerset Dr.
Durham 27707
919-489-5649

Paul Luebke
1311 Alabama Ave.
Durham 27705
919-286-0269

District # 24
Anne C. Barnes
313 Severin St.
Chapel Hill 27516
919-967-7610

Joe Hackney
104 Carolina Forest Rd.
Chapel Hill 27515
919-929-0323

District # 25
J. Fred Bowman
814 N. Graham-Hopedale Rd.
Burlington 27215
919-228-7521

Bertha M. "B" Holt
P.O. Box 1111
Burlington 27215
919-227-7333

Peggy Wilson
214 W. Hunter
Madison 27025
919-427-5537

R. Samuel "Sam" Hunt
1218 W. Davis St.
Burlington 27215
919-227-9767

District # 26
Herman C. Gist
442 Gorrell St.
Greensboro 27406
919-274-0701

District # 27
Maggie Jeffus
1803 Rolling Rd.
Greensboro 27503
919-275-4762

Joanne W. Bowie
106 Nut Bush Dr., E
Greensboro 27410
919-294-2587

Albert S. "Al" Lineberry
P.O. Box 630
Greensboro 27402
919-272-5157

District # 28
Mary Long Jarrell
1010 Wickliff Ave.
High Point 27262
919-884-1276

Stephen Wood
1221–E N. Main St.
High Point 27262
919-883-9663

District # 29
Michael Decker
6011 Dex Hill Dr.
Walkertown 27051
919-595-4864

District # 30
Arlie F. Culp
Rt. 2, Box 529
Ramseur 27316
919-824-2218

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919-723-0007

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DICKINSON'S PHARMACY

"...the FDA regards volume-compounded prescriptions as a warning sign that the pharmacy may no longer be a simple state-regulated pharmacy..."

Is compounding too risky? When two patients each lost an eye after instilling indomethacin eye drops compounded by a Pittsburgh independent pharmacy, the mass media headlines did more than just bring acute anguish to a seasoned pharmacist.

They set in motion a tide of events that could spell an end to the small level of extemporaneous compounding that still flourishes in many independent pharmacies.

The middle-aged patients — and dozens like them who did not lose their eyes— had all been prescribed indomethacin ophthalmic solution after cataract surgery as prophylaxis for cystoid macular edema. Ophthalmologists are divided on whether this is medically sound; some say indomethacin is only useful as actual treatment for diagnosed cystoid macular edema (less than 6% of cataract patients suffer from this condition) and contend that it is useless as a preventative.

Whatever the merits of the professional dispute, indomethacin ophthalmics are apparently a growing business across the country, as the population ages at an unprecedented rate and cataract surgery becomes a rising tide. But it's also a business that Indocin manufacturer Merck Sharp & Dohme has been strenuously discouraging.

In a standard letter sent to physicians and pharmacists who inquire about compounded Indocin ophthalmic solution, Merck acknowledges that it is considering development of such a commercial product, but stresses: "it is specifically recommended that INDOCIN capsules not be used to prepare topical solutions or suspensions in the absence of data on stability, concentration and possible effects of excipients."

Pennsylvania state and federal FDA investigators said that this is just what Edward Kilkearny, owner of Hieber's Drug Store in downtown Pittsburgh had been doing for years. Nourished by at least 10 ophthalmologists based in the huge medical complex opposite his pharmacy and nearby, the 1952 Duquesne University pharmacy graduate's business quickly came to be basically this kind of compounding; Indocin and/or generic indomethacin capsules were dissolved into Alcon's Replacement Tears over several days and sterilized in an upstairs dentist's autoclave.

The business became so large, investigators said, that it became a packaging operation for other pharmacies and sold it direct to wholesalers and ophthalmologists for relabeling.

Then something happened that allowed huge colonies of pseudomonas bacteria to be detected in bottles turned in to Allegheny General Hospital by seriously infected post-surgical cataract patients.

As this column went to press, investiga-

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy— The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

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tors had not discovered the source of the contamination. Some suggested that it might have been in a new laminar flow hood that Hieber's Drug Store had just installed—but autoclaving should have killed the bacteria. Some speculated that the bacteria might have migrated inside the drug capsules—but again, autoclaving should have killed them.

And some suggested that the sooner Merck got its Indocin Ophthalmic commercial product on the market, the better—that pharmacists should not be doing this kind of work, if blindness could result.

And, of course, there was talk of lawsuits.

Even though the state and federal investigations were still unfinished when I wrote this, there were some clear lessons for all pharmacists in the episode, regardless of the source of pseudomonas.

First, said state pharmaceutical association executive director Carmen DiCello, what Kilkearny was doing, fundamentally, was "very necessary and professional." Pharmacists everywhere definitely should continue to compound, and to increase their compounding business in conjunction with the rising demands of medical practitioners treating an aging population.

Second, he said, pharmacists must ensure that they have the correct equipment for such work, and that they check this equipment daily. In the case of the laminar flow hoods, daily tests must verify that the system remains free of bacterial or other contamination. Likewise, any necessary sterilization procedures must be validated daily.

Third, it would be wise to consider purchasing additional liability insurance coverage in case even the most careful precautions do not prevent an additional risk.

DiCello didn't say so, but he could have added a fourth condition which, without anticipating the final results of the investigations at Hieber's Drug Store, should always be a threshold consideration.

Before allowing such compounding business to grow in any pharmacy, the pharmacist should be aware the FDA regards volume-compounded prescriptions as a warning sign that the pharmacy may no longer be a simply state-regulated professional pharmacy, but may in fact be an unregistered manufacturing facility.

In that case, all of the prescriptions so compounded would be viewed as unapproved new drugs, subject to federal prosecution, seizure and injunction.

In some states, such as Pennsylvania, FDA may elect to defer to similar state laws on the issue of when a pharmacy becomes a regulatable manufacturing facility.

The safest bet for compounding pharmacists, from FDA's viewpoint, is to confine dispensing to the limits of one prescription per individual patient. •

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SELLING YOUR OWN PEOPLE: INTERNAL MARKETING

This is the twelfth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, pharmacists need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

A service has both tangible and subjective qualities to it. Individuals who service the customer (the patient)—you and your own colleagues—set the tone for the customer experience. The toughest selling job in services is not persuading the customer, but convincing professional employees to play the roles that are appropriate to meeting the customer's needs and still preserve their own self-image. It seldom comes naturally to them. This tough part of managing professionals—selling them on doing the job the way you want it done—is called *internal marketing.*

If management has studied its market and service strategy, it has designed the service experience, i.e., the "marketing transaction," the way management wants it delivered to the customer. The marketing transaction is usually designed to help the customer enter and, more importantly, leave with a specific positive image of the company, the location, the service, and the server (employee). In essence, the "designers" have written a playlet using the company "script"—the specific set of desired behaviors for the marketing transaction. The customers play themselves and the server plays out the role that will please them. For the script to work effectively, however, the server must understand what their service role is, and better yet, believe it.

Professionals often have a hard time distinguishing between doing things the right way and arbitrary bossism. Their professional training has taught them what is "right" technically, but their unschooled assumption often is everything else doesn't matter and they can do what comes naturally. As a result, they strongly resist attempts to modify their behavior which they see as a loss of professional autonomy. There are some kernels of truth in their position, too. Few professionals are good enough actors to fake sincerity. Professionals have to behave in a way that is congruent with their personality; otherwise, their patients will sense something suspicious and be put off.

Marketing the Transaction

Belief that a certain way to handle the customer is right is dependent on the belief

CURTIS P. MCLAUGHLIN is Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. He has written numerous management articles for a variety of publications including Harvard Business Review, and he has consulted for many domestic and international corporations. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

that the interaction between the customer and professional server is in the best interest of both. It would be nice, too, if the professional also thinks it is in the best interest of the firm. This is where internal marketing comes into play.

The first internal marketing task is to convince professionals they are an agent for the client and to sell them on the benefits of conducting the desired marketing transaction as an agent of the client. The second internal marketing task is to sell the professional on executing a task using the company's specific set of desired behaviors—the script—for the marketing transaction. The pharmaceutical industry, for example, is well aware of the role of its medical sales representatives in "selling" the physician who is an agent of the patient. It is also keenly aware of the need to "sell" medical service representatives on the importance of what they are doing. A third internal marketing task is making the job of serving the unpredictable customer an acceptable transaction for the professional.

Figure 1 below depicts two sets of outcomes involving interactions with the professional during the marketing transaction. It may look complex, but in no way does it represent the true complexity of these interactions. Management must view both sets as a single process to achieve the service experience it wants delivered to the customer. For example, if the interaction between the company and the professional is not working effectively, dissonance will feed back and confound the interaction between the customer and the professional, resulting in an undesirable marketing transaction.

Recently, I was teaching a group of department heads in a large, acute care hospital. When I showed them an advertisement from a competing community hospital to make a point about competition, the "floodgates opened." They talked about how upset they were that their institution did not "blow its horn." They felt discounted, defenseless, abandoned, and left without a way to express their excellence. This hospital had missed a key opportunity to impress its employees with the importance of their roles. If it did not build them up, it could hardly expect them to build up the institution in the eyes of their patients.

The Public is NO FUN

The public is not easy to deal with. They can be inconsiderate, dependent, unpleasant, and act out their frustrations on others. It is a major strain to deal with them on a minute-by-minute basis. Their arrivals are unpredictable, producing intermittent negative reinforcement. Some of them are addicted and manipulative. Being the pharmacist at either a hospital or community pharmacy is not just a "God-in-a-white-coat" role or a "pill-counting" exercise.

Motivating the Script

To help motivate the professional to respond positively towards the public, the

Figure 1
Balancing the Marketing Transaction

Deference, Gratitude Purchase of product Loyalty, Guff				Desired behaviors Sales revenue Professional expertise
Client	⟷	Professional	⟷	Employer
Safety Advice, Concern Accessibility Image conveyed				Safety Pay Good working conditions Professional development

company must balance the costs of following its script with the benefits. The cost to professionals is all the unpleasant aspects of the job, such as dealing with the public and modifying their behavior with the company's script. The benefits include the financial rewards and fringes which are very substantial even at the entry level. They also include all the other psychic rewards such as friendships and professional development.

Even though the benefits package is a complex one, as we noted in an earlier article on the psychological contract, it can be balanced in a number of ways.[1] Most managers think of financial rewards first and last. Financial rewards are certainly a part of the benefits package, but they are not the only alternative by a long shot. Alternative options for consideration include: changes in work place surroundings; tailoring procedures, including company scripts, to professional preferences, skills, education and training; and allowing work arrangements that alternate between customer contact and back room tasks to avoid professional burnout.

Selling the Changes

When changes are made to improve or rearrange the marketing transaction, they must be sold to the professional employees. One effective way of selling professional employees on a new marketing transaction is through the company's advertising. What is shown to the public is also seen by the employee. This way, they both know what to expect. As you watch the ads on television for service companies, look at them from the employee's point of view, as well as the customer's. A surprising number of them are aimed at the employees.

The two most effective ways of selling a new marketing transaction to professional employees are personal selling and training videos. These should be backed up with print messages, as well. Yet, personal selling is the key. Every level of supervision must internalize the new script for the improved marketing transaction and then transmit the message. This is where most attempts break down. For example, hospitals can have wonderful intentions at the top, but the communications seldom get down to the "firing line." To sell the new behaviors that are to be expected of employees, the message has to be transmitted and then reinforced by supervisors' behaviors, reward systems, advertising, and training and retraining, again and again.

In addition, professionals must have the opportunity to give management feedback. From their expert point of view the script may be flawed. By allowing dialogue, managers can hold a professional's attention for much longer than one can through normal training media. Their intellectual involvement, as well as their compliance, is needed if professional employees are to continue to act out the company's service objectives. If they feel some ownership in the company script through slight modifications, they will make it work.

References:

1. McLaughlin CP. The Joining Up Process. *The Carolina Journal of Pharmacy* 1989; 70(April):13–20. •

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THE CAROLINA
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FEBRUARY 1991 VOLUME 71 NUMBER 2

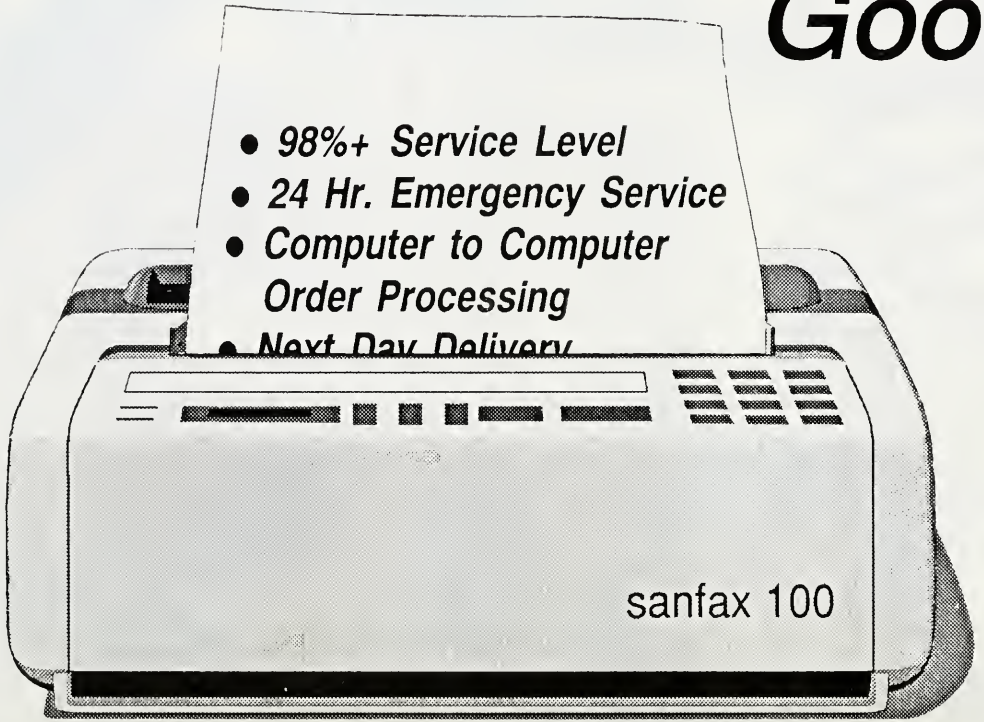
Pharmacy in the Decade of 90's Decisions

NCPhA
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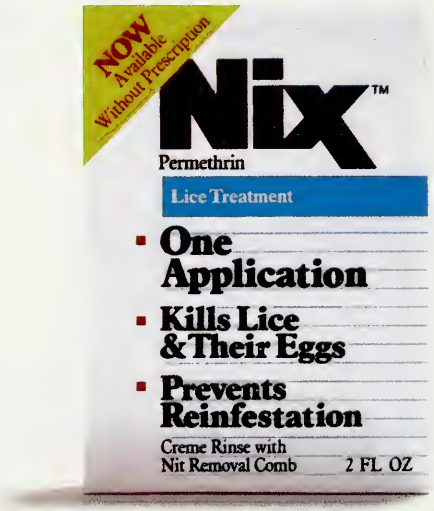
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1. Brandenburg K, Deinard AS, DiNapoli J, Englender SJ, Orthoefer J, Wagner D. 1% permethrin cream rinse vs 1% lindane shampoo in treating pediculosis capitis. *Am J Dis Child.* 1986;140:894-896. 2. Data on file, Burroughs Wellcome Co., 1990.

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THE CAROLINA
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Officers
NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

President
J. FRANK BURTON
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Vice Presidents
BETTY H. DENNIS
104 Calumet Court
Carrboro, NC 27510
919•962•0030

JOSEPH A. EDWARDS JR.
2025 St. Mary's Street
Raleigh, NC 27608
919•833•7558

HENRY L. SMITH
P.O. Box 147
Farmville, NC 27828
919•753•7111

Journal Staff

Editor
ALFRED H. MEBANE III

Managing Editor
KATHRYN K. JEFFERSON

Editorial Assistants
ERIE C. COCOLAS
TERRI M. LITTLE

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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THE PRESIDENT'S PAGE

J. Frank Burton
NCPhA President

"Action vs. Reaction"



As I stood at my typewriter (community pharmacists, as we all know, can type only standing up) the other day firing off yet another letter to yet another corporate CEO explaining NCPhA's "concern" that his company had instituted a mail order prescription plan as part of its employee health benefits program, I found myself wondering if this letter would generate anything more than the usual polite response explaining how the company had added the mail order plan to their health coverage at the requests of their employees or because of the increasing economic burden of the prescription drug coverage segment of their previous health plan. Understand, I am not questioning the importance of continuing to voice the reasons community pharmacists and others object to mail order. This we should do by correspondence, phone calls, face-to-face dialogue, or whatever means available. And we must always stress that mail order prescription programs deny an individual the opportunity to get the type of quality pharmacy services that can only be rendered by the local community pharmacist who knows them and their family and who is in the best position to monitor their prescription and over-the-counter medications for potentially dangerous (and expensive) drug interactions and adverse reactions.

But it is becoming increasingly obvious that we are not going to win the battle against mail order, or any of the other issues that threaten our profession, by simply reacting to each new setback with great protest and indignation. Our response to these threats must instead be a plan of action, not reaction. It is for this reason that NCPhA's Committee on State Legislation has recommended to the Executive Committee an ambitious agenda of legislative proposals. The Executive Committee unanimously approved these recommendations, and with the help of our lobbyist and legislative advisors, NCPhA is seeking the introduction and passage of a number of bills in this session of the N.C. General Assembly. Among the issues addressed by this legislative package are: statutory authority for the N.C. Board of Pharmacy to charge fees for Device Permits and Physician Assistant and Family Nurse Practitioner Dispensing Permits; amending the current "Physician Dispensing" regulations to establish a fee for permits based on a figure for each site of dispensing as well as a figure for each practitioner participating in dispensing at that site; and "Freedom of Choice" legislation with regard to third party plans with exclusive provider contracts or mandatory mail order provisions. The NCPhA will also oppose any legislative effort to implement triplicate or other multiple copy prescription forms for controlled substances, and support legislation to implement guidelines for state licensing of wholesale prescription drug distributors.

As you can see, NCPhA is responding to the need for action with our most aggressive legislative effort ever! But we have no chance of achieving even minimal success without statewide grass-roots activity by not only all of you, but by your non-NCPhA member colleagues whom you must recruit to this effort! So let us keep writing our letters and making our telephone calls, but let the recipients of those activities now be state senators and representatives from your district or that you otherwise know. We will give the corporate CEO's a rest for a little while! •

See the January 1991 issue of *The Carolina Journal of Pharmacy* for additional legislative target areas and for how-to tips on writing to your legislators.

Pharmacy in the Decade of 90's Decisions

NCPhA
111th Annual
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***Proposed by the** *Pharmacy in the 21st Century—North Carolina Commission*

111th NCPhA ANNUAL CONVENTION
STOUFFER WINSTON PLAZA HOTEL
WINSTON-SALEM, MAY 22-25, 1991

PROGRAM

Wednesday, May 22, 1991

8:30a.m.-5:30p.m.	UNC School of Pharmacy Practitioner-Instructor Workshop
3:00-6:00p.m.	Registration Desk Open
6:00-7:00p.m.	**PRESIDENTS' RECEPTION** honoring the Presidents of NCPhA, the Woman's Auxiliary, and the Traveling Member's Auxiliary
7:00-10:00p.m.	**OPENING BANQUET** John R. Setzer, Convention Chairman and Master of Ceremonies **"The Prescription That Works"** Randy K. Kilby, humorist

Thursday, May 23

7:30a.m.	**V.I.P. Breakfast** **T.M.A. Foundation Breakfast**
9:00a.m.-12:30p.m.	**1st NCPhA GENERAL SESSION** 3.0 C.E. hrs Joseph A. Edwards Jr., 2nd Vice President, *Moderator* **Rite of the Roses** Henry L. Smith, 3rd Vice President, and Mrs. Smith **Keynote Address** **"Why Pharmacists are Important"** Robert E. Slater, Marion Merrell Dow Inc. **President's Address** J. Frank Burton **Committee Reports: Constitution & Bylaws, Nominations, and Resolutions** **Annual Reports:** **Campbell U. School of Pharmacy** Ronald L. Maddox, Dean Jerry Haynes, ASP President **UNC School of Pharmacy** Tom S. Miya, Dean Julie Haizlip, ASP President **Pharmacy in the 21st Century: A Mission for Pharmacy in N.C.** William H. Edmondson, Chairman, P21-NC Commission

BOARD OF PHARMACY EXAM REVIEW
STOUFFER WINSTON PLAZA HOTEL
MAY 23-24, 1991

Thursday, May 23, 1991

2:00p.m.-5:00p.m.	**Introduction of Program** Ronald W. Maddox, Pharm.D., Dean Campbell University School of Pharmacy
2:05p.m.-3:00p.m.	**NC Pharmacy Law Review** David R. Work, J.D., R.Ph., Executive Director NC Board of Pharmacy
3:00p.m.-3:45p.m.	**Review of Over-the-Counter Products** Stephen Caiola, M.S., R.Ph. UNC School of Pharmacy
3:45p.m.-4:00p.m.	**Refreshment Break** Sponsored by Campbell University & UNC Schools of Pharmacy
4:00p.m.-5:00p.m.	**Pharmacokinetic Review** Ronnie Chapman, Pharm.D. Campbell University School of Pharmacy

Friday, May 24, 1991

2:00p.m.-2:15p.m.	**NC Pharmacy Board Format** Jack G. Watts, R.Ph. NC Board of Pharmacy
2:15p.m.-3:10p.m.	**Review of Parenteral Antibiotics** Byron May, Pharm.D. Campbell University School of Pharmacy Duke University
3:10p.m.-3:30p.m.	**Refreshment Break** Sponsored by Campbell University & UNC Schools of Pharmacy
3:30p.m.-4:40p.m.	**Errors and Omissions: Compounding** Robert L. Smith, M.S., R.Ph. UNC School of Pharmacy
4:40p.m.-5:00p.m.	**Evaluation** Kathryn Kuhn Jefferson, R.Ph. NCPhA
5:00p.m.-6:00p.m.	**Board Candidates' Reception**

Thursday, May 23 (continued)

9:00a.m.-12:30p.m.	**1st NCPhA GENERAL SESSION (continued)** **Annual Report of the NC Board of Pharmacy** David R. Work, Executive Director, NC Board of Pharmacy **USP Drug Product Problem Reporting Program: The Pharmacist's Commitment to Drug Product Quality** Diane M. McGinnis, Director, USP Drug Reporting Program Sponsored by the USPC **Refreshment Break** Sponsored by N.C. Mutual Wholesale Drug Company
9:30a.m.	**Woman's Auxiliary Tour of Old Salem and Lunch at Old Salem Tavern**
1:00p.m.	**YOUNG PHARMACISTS' LUNCHEON**
Afternoon	**GOLF TOURNAMENT** Sponsored by Owens-Brockway, Burroughs Wellcome Co. and Glaxo Inc.
Afternoon	**TENNIS TOURNAMENT** Sponsored by Jefferson Pilot
2:00-4:00p.m.	**COMMUNICATIONS WORKSHOP** **2.0 C.E. hrs** **Information Gathering: Pharmacist-Patient Communications** Elliot Sogol, Director, External Professional Education Programs, Glaxo Inc.
2:00-5:00p.m.	**BOARD OF PHARMACY EXAM REVIEW**
8:00-10:30p.m.	**CASINO NIGHT**
10:30p.m.	**ICE CREAM PARTY**

Friday, May 24

7:30a.m.	**PharmPAC Breakfast** Speaker: Noted Political Figure
8:30a.m.	**Woman's Auxiliary Coffee**
9:00a.m.-12:30p.m.	**2nd NCPhA GENERAL SESSION** **3.0 C.E. hrs** J. Frank Burton, 1990-91 President, *Moderator* **Report of the State Legislative Committee** Ralph H. Ashworth and Bill Jackson, Co-Chairmen

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Friday, May 24 (continued)

9:00a.m.-12:30p.m.	**2nd NCPhA GENERAL SESSION** (continued) **"The Controlled Substances Laws: But You Can't Arrest Me–I Didn't Know That Was Illegal"** Walter Fitzgerald, J.D. Sponsored by Hoechst-Roussel Pharmaceuticals **"Practical Management of Topical Retinoids"** Sponsored by Ortho Pharmaceuticals Refreshment Break Sponsored by N.C. Mutual Wholesale Drug Company
9:30a.m.	**Woman's Auxiliary Business Session**
11:00a.m.	**T.M.A. Business Session**
12:30p.m.	**Woman's Auxiliary Luncheon** Forsyth Country Club
1:00-5:00p.m.	**EXHIBITORS FAIR & LUNCH** **1.0 C.E. hrs** Benton Convention Center, South Exhibit Hall
1:00p.m.	**CU and UNC Schools of Pharmacy Practitioner-Instructors' Luncheon**
2:00-5:00p.m.	**BOARD OF PHARMACY EXAM REVIEW**
5:00p.m.	**EXHIBIT FAIR PRIZE DRAWING**
7:30-9:00p.m.	**OFFICERS INSTALLATION DINNER**
9:00p.m.-midnight	**T.M.A. DANCE featuring "Joyce Hawley & the Rhythm Section" of Raleigh**

Saturday, May 25

7:30a.m.	**Christian Pharmacists' Breakfast**
8:00a.m.-10:00a.m.	**Registration Desk Open**
8:30a.m.	**Woman's Auxiliary Past Presidents' Breakfast**
9:00a.m.-12:30p.m.	**3rd NCPhA GENERAL SESSION** **3.0 C.E. hrs** Betty Dennis, 1991-92 President, *Moderator* **Discussion & Voting on: Proposed Resolutions, Nominations for NCPhA Candidates for Office, and Proposed Constitution & Bylaws Amendments**



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Saturday, May 25 (continued)

9:00a.m.-12:30p.m.	**3rd NCPhA GENERAL SESSION (continued)** **Report of the N.C. Medicaid Program** C.B. "Benny" Ridout, Pharmacy Consultant, N.C. Medicaid Program **New Drug Update** J. Richard Wuest, Pharm.D. and Thomas A. Gossell, Ph.D. Sponsored by Searle Pharmaceuticals **Reports:** **Time & Place Committee** **Convention Registrar** Refreshment Break Sponsored by N.C. Mutual Wholesale Drug Company
1:00p.m.	**AWARDS LUNCHEON** "50 Plus Club" Inductions, presentation of Geigy "Pharmacist Mate" Award, E.R. Squibb Presidential Award, Syntex Preceptor of the Year Award, NARD Leadership Award and McKesson Award

YOUR CONVENTION REGISTRATION PACKETS WILL SOON BE ARRIVING IN THE MAIL.

ATTENTION PHARMACISTS LICENSED 50 YEARS OR MORE

If you have been a pharmacist for 50 years or more—licensed in 1941 or earlier—you are eligible for induction into the 50-Plus Club. Inductees will be recognized at the Awards Luncheon, Saturday, May 25, during the 111th NCPhA Annual Convention at the Stouffer Winston Plaza Hotel in Winston-Salem. Friends and family are welcome.

Contact the NCPhA office if you qualify for "membership" into this elite group of pharmacists who have served their profession for 50-plus years. Call 800-852-7343 (in NC) or 919-967-2237.

CALL FOR RESOLUTIONS

Resolutions from NCPhA members may be submitted for study or action at the 111th NCPhA Annual Convention. Resolutions help guide NCPhA policy, planning, and actions. Each resolution is reviewed, in advance, by the Resolutions Committee for appropriateness and form. Resolutions are presented by the Resolutions Committee to the NCPhA membership during the 1st and 3rd NCPhA General Sessions. You may submit your resolution in writing by April 15, 1991 to:

LeRoy Werley
Chairman, Resolutions Committee
NCPhA
P.O. Box 151
Chapel Hill, NC 27514

NCPhA CONVENTION LINEUP



J. Frank Burton
President, NCPhA



Mary Lou Worley
President, WA



John R. Setzer
Convention Chairman



Dick Hoffman
President, T.M.A.



Diane M. McGinnis
Speaker



Joyce Hawley
Entertainer



Walter Fitzgerald
Speaker

NCPhA CONVENTION HIGHLIGHTS

Twelve Hours of Continuing Education can be obtained by attending the NCPhA General Sessions, workshops and exhibits during the 111th NCPhA Annual Convention, May 22-25.

A Mission for Pharmacy in the 21st Century will be presented by Dr. William H. Edmondson, Chairman, Pharmacy in the 21st Century–North Carolina Commission, a mutifactional pharmacy task force devoted to the study of a mission for pharmacy in North Carolina. Following months of deliberation by the Commission, Edmondson will introduce the new mission for North Carolina pharmacy and explain the purpose and intent of the mission for pharmacy.

Counseling the Low-Literate Patient Videotape. The NCPhA will unveil a new videotape made possible through an educational grant from The National Council of State Pharmaceutical Association Executives and The Upjohn Company. The videotape focuses on the scope of the illiteracy problem in patients and how to identify and counsel low-literate and illiterate patients.

An Opportunity to Network with pharmacists who are eager to exchange ideas with you and enjoy your fellowship at the 111th NCPhA Annual Convention.

Convention "Delegates," i.e., officers and/or appointed representatives from local pharmacy associations throughout the state will be recognized at the NCPhA General Sessions and banquets and honored at the V.I.P. Breakfast along with other pharmacy leaders in North Carolina.

Presidents' Reception, on Wednesday, May 22, from 6:00 p.m.-7:00 p.m., will honor J. Frank Burton, NCPhA President; Mary Lou Worley, Woman's Auxiliary President; and Dick Hoffman, Traveling Member's Auxiliary President.

Randy K. Kilby, a humorous speaker who has captivated thousands of people with his serious messages will speak at the Opening Banquet, Wednesday, May 22. Using meeting halls everywhere as his classroom, Randy uses humor, information, encouragement and a bit of philosophy to help people meet the challenges of life.

Diane M. McGinnis, Director of the USP Drug Product Problem Reporting Program (DPPR), will talk about the USP program she manages. In her presentation on Thursday, May 23, McGinnis will explain the mechanics of the USP DPPR Program; identify the types of product problems that are reportable through the DPPR; discuss the uses of drug product problem reports by USP, industry, and the FDA; and present evidence of the benefits of the USP DPPR Program.

Walter L. Fitzgerald, R.Ph., M.S., J.D., Thomas A. Gossel, Ph.D., and J. Richard Wuest, Pharm.D. are back by popular demand. Fitzgerald will discuss actual cases involving the mismanagement of controlled substances by pharmacists during his presentation, "But You Can't Arrest Me—I Didn't Know That Was Illegal" on Friday, May 24. The purpose of his program is to re-examine the controlled substance laws and to educate pharmacists on their responsibilities in managing controlled substances. Gossel and Wuest will bring pharmacists up-to-date on new drugs and drug therapies of 1990-91 during their presentation on Saturday, May 25. Gossel and Wuest are regular contributors to the pharmacy literature including *The Carolina Journal of Pharmacy* which routinely features C.E. articles authored by them.

The Second Annual Pharmacy Board Exam Review will take place on Thursday, May 23, and Friday, May 24 during the 111th NCPhA Annual Convention. Two afternoons will be devoted to helping new pharmacy graduates or other interested pharmacists prepare for their national and state board exams. See the program agenda on page 8.

Awards will be presented to deserving pharmacists at the Opening Session Banquet on Wednesday, May 22, and the Awards Lun-

cheon on Saturday, May 25. The awards include: Wyeth-Ayerst Bowl of Hygeia Award, Don Blanton Award, Marion Merrell Dow Inc. Distinguished Young Pharmacist of the Year Award, NARD Leadership Award, McKesson Award, Syntex Preceptor of the Year Award, E.R. Squibb Presidential Award, Geigy Pharmacist Mate Award, and the announcement of the 1991 Pharmacist of the Year. Inductions into the 50-Plus Club—pharmacists licensed 50 years or more—will also take place during the 111th NCPhA Annual Convention. Winners of these awards will be announced in an upcoming issue of *The Carolina Journal of Pharmacy* following the Convention.

Exhibitors' Fair and Complimentary Luncheon. After you feast on a delicious lunch, you can browse through the large number of exhibits featuring pharmaceutical manufacturers and suppliers of pharmacy equipment, goods and services at the Benton Convention Center on Friday, May 24.

Casino Night, Thursday, May 23. Come break the bank and make it a night to remember as you join in the fun at our exciting casino theme party. Regulation tables, chips and tuxedoed dealers are all part of this fabulous event. Big winners will be awarded prizes at the conclusion of the evening.

Ice Cream Party, Thursday, May 23. As a finale to an evening at Casino Night, ice cream and lots of toppings will be served with delicious coffees.

The T.M.A. Dance, Friday, May 23, will feature Joyce Hawley and "The Rhythm Section" of Raleigh for an evening of music, dance, and entertainment.

Communications Workshop on Information Gathering: Pharmacist-Patient Communications by Elliot Sogol, Ph.D., Director of External Professional Programs at Glaxo Inc. The workshop will take place opposite the Golf and Tennis Tournaments for those pharmacists who prefer not to participate in the sports activities or want more C.E. hours.

Officers' Installation Dinner on Friday, May 24. An elegant dinner will precede the installation of the 1991-92 NCPhA officers and affiliated auxiliaries.

And so much more . . .

PHARMACY CALENDAR 1991

March 9-13	APhA 138th Annual Meeting, New Orleans, LA
March 17-23	National Poison Prevention Week
March 18	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
March 21	**25th Annual Socio-Economic Seminar, Greensboro**
April 6	Parents Day, Campbell University
April 7	**Ethics, Grievance & Practice Committee, Institute of Pharmacy**
April 21-23	National Council on Patient Information & Education (NCPIE) 8th National Conference, *Managing Diversity in Medicine Communication*, Washington, DC
April 21-23	NARD's 23rd Annual Conference on National Legislation and Public Affairs, Washington, DC
May 12	UNC School of Pharmacy Graduation
May 13	Campbell University School of Pharmacy Graduation
May 19-22	NARD Expo, Reno, NV
May 22-25	**111th NCPhA Annual Convention,** *Pharmacy in the 90's–Decade of Decisions*, **Stouffer Winston Plaza Hotel, Winston-Salem**
May 23-24	2nd Annual Pharmacy Board Exam Review, Winston-Salem
June 2-6	ASHP Annual Meeting, San Diego, CA
June 24-25	NC Board of Pharmacy Licensure Exam

P.A.C.E. AND PhSAT—PHARMACISTS' TOOLS FOR MEASURING EXCELLENCE

Two tools for measuring excellence in pharmacy, the Pharmacy Award for Compensation Excellence (P.A.C.E.) and the Pharmacists Self-Appraisal Test (PhSAT), have been evaluated and recommended by the NCPhA Employee/Employer Relations Committee. Developed by pharmacists in Texas, the two instruments were previously marketed by the Texas Pharmaceutical Association. After some slight modifications, the Employee/Employer Relations Committee's recommendations for the use of the two instruments in North Carolina were approved by the NCPhA Executive Committee on December 9, 1990.

The P.A.C.E. program has been established in an effort to improve pharmacist compensation programs across the state and to decrease the emphasis on salary as the sole criteria in job opportunity comparisons. This award will recognize employers who have achieved excellence in their compensation and benefits package offered to pharmacists.

The purpose of the award is to encourage employers to provide pharmacists with a working environment conducive to personal and professional growth. In addition, the program and nomination form can assist pharmacy students and interested pharmacists in making an informed decision concerning employment opportunities.

To be eligible, the employer must have achieved a minimum of 50 points from each of the two sections of the P.A.C.E. nomination form—"Fringe Benefits" and "Professional Benefits." (Note: Employers can only be nominated for P.A.C.E. recognition by one of their employee pharmacists.) Employers who are P.A.C.E. achievers will be recognized at the 111th NCPhA Annual Convention, May 22-25, 1991, and each Convention thereafter.

When searching for the ideal employment opportunity, pharmacists should also evaluate their own professional performance. If pharmacists expect employers to provide a desirable compensation and benefits package, then pharmacists should demonstrate their contribution to the profitability of the employer in return. Hence, a self-evaluation tool for pharmacists called the PhSAT has been designed to complement the P.A.C.E. program. Pharmacists will be encouraged to perform a self-evaluation via the PhSAT to assess their competence on the job, involvement in professional and civic activities, and length of professional service.

The PhSAT is composed of ten sections of varying point values that are added together to obtain the Pharmacist's GPA. The results of the PhSAT should challenge pharmacists to improve their deficient areas. Pharmacists in a variety of practice settings will find the PhSAT applicable and beneficial as well as an ongoing opportunity to periodically examine areas for self-improvement.

Look for the P.A.C.E. nomination form and the PhSAT in an upcoming *Tarheel Digest.*

Employee/Employer Relations Committee members: John Mackowiak (chairman), Kevin Almond, Wayne Avery, Sandra Bettenhausen, Don Blakenship, C.D. Blanton, Brent Clevenger, LaRue Dedrick, Lisa Grimes, Barbara Johnson, Mary Ann Largen, George Malpass, Patsy Myers, Grace Ponzer, Bob Schollard, David Schultz, and Vince Stevens. •

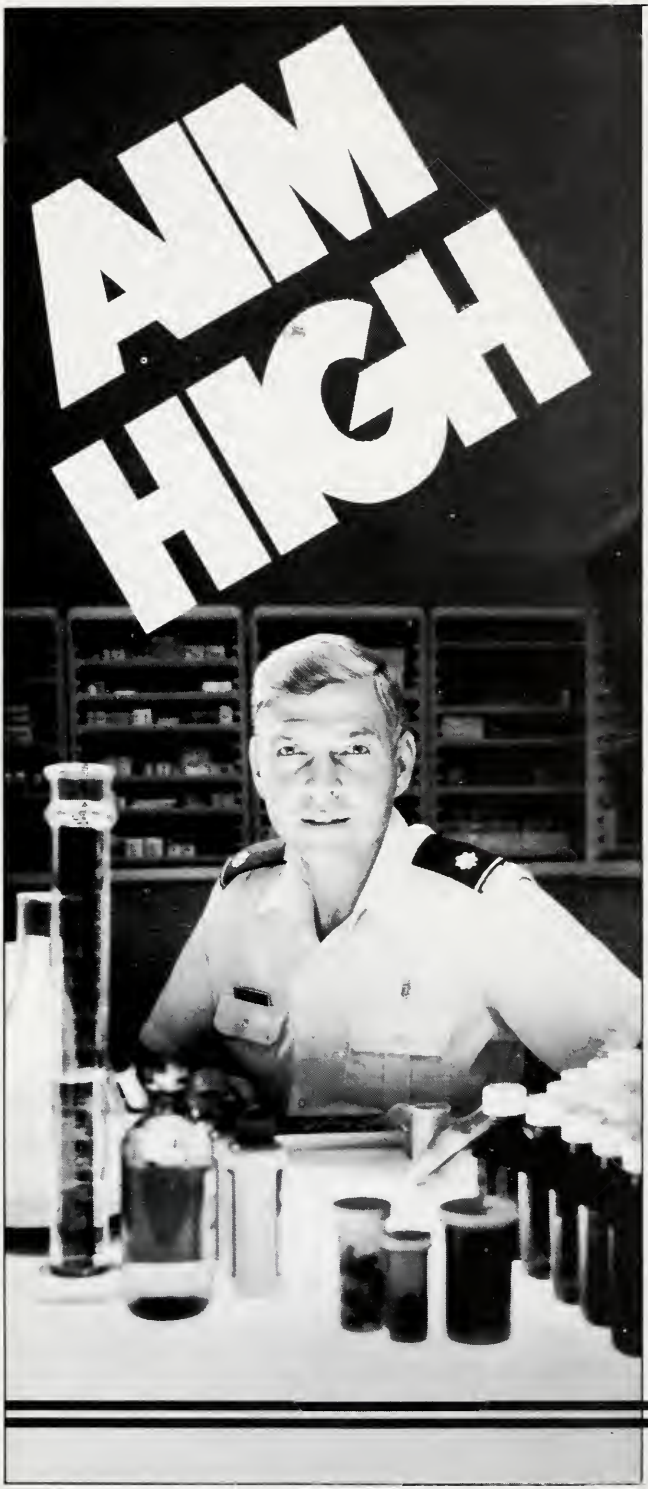
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PROFESSIONALISM AND MULTIPLE ROLES IN PHARMACY

This is the thirteenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Several months ago, I participated in a continuing education presentation for pharmacists. My assignment was to key my presentation to some of the professionalism issues raised earlier in this series of articles. Many of these articles have focused on the pharmacist as a professional and as an actual or potential managerial employee. While preparing, however, I also kept thinking of pharmacists as members of a hierarchy of technologists, the approach taken by wage and salary specialists in large corporations. Over thirty years ago, I worked as an administrator in a large corporate research laboratory that had many types and levels of technologists incorporated into its personnel systems, much as a hospital does today. This paper considers some of the dilemmas that employed pharmacists face in living out three roles at once.

To focus participants' minds on the three roles, I developed Figure 1. The professional role at left is how most pharmacists would like to be seen by the world—as *uniquely qualified, licensed* professionals who act as *autonomous* individuals in a *disinterested* manner—serving as reliable agents of their patients. At the same time, they are managers (or owners) or supervisors or employees who lead and control those who work for them and respond to the forces from above and from the marketplace.

At the same time, however, they may have to fit into some classification scheme. If I remember correctly, the multinational chemical firm that I worked for would probably classify a B.S. Pharm. as a Technician IV plus or minus one level; an unusually good one might ultimately achieve Scientist II status. It was a highly artificial scheme but it had meaning in our life space. I had a B.A. in Chemistry and a M.B.A. and started out in administration of the engineering laboratory, so I was classified as a Chemical Engineer (Scientist I). I knew nothing about engineering, yet after a few months everyone began acting as if I had once been a chemical engineer. That classification determined my assumed knowledge and assumed history. It is a powerful metaphor.

The issue then for many pharmacists is how to move their self-corporate and public images toward the left side of Figure 1. Doing that is a job for both individual pharmacists and the organizations that represent them.

Professionalism

As we reported earlier, the public has two usages available for the word professional. The first is characterized by conforming to the technical and ethical standards of a profession. The second is that one does things

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

Figure 1
Three Roles of the Pharmacist

PROFESSIONAL	EMPLOYEE	CLASSIFICATION
autonomous	manager	Scientist III Scientist II
disinterested	supervisor	Scientist I
uniquely qualified	employee	Technician V Technician IV
licensed		Technician III Technician II Technician I

for money rather than as an amateur. Avoiding looking amateurish, therefore, is important in everything a pharmacist does. Furthermore, pharmacists must do everything possible to show that they have and adhere to both technical and ethical standards.

The public determines the status of a profession, not its members. The public will accept or even enhance the status of a profession which 1) proves it has unique knowledge that the public lacks and 2) is willing to use that information in a disinterested manner. Since the public lacks the knowledge to evaluate the performance of a profession, it must allow the profession to evaluate its members. But the public is very suspicious that this can turn into having the fox guarding the hen house. They have to be convinced that the profession is disinterested. In some disciplines this is called professional ethics. In economics it is called agency. Can the public be confident that a pharmacist is always acting as its agent in a transaction? This is an operational question always in the public's mind.

Employee Roles

Because so much of pharmacy practice involves a commercial transaction, the pharmacist's image is always under tension. The public may wonder, "Are you doing that to make the most money for you or are you looking out for my interests?" Clearly, one or the other is too simplistic for most cases. Pharmacists are making money for themselves and for their employers *and* looking out for the patient's interest. This is often described in terms of looking out for the patient's safety, with the less said about the pocketbook the better. Can one be crying *caveat emptor* for price, but not for safety? That is a lot for people to swallow.

How can pharmacy avoid losing its disinterested status? Here perception is more important than fact.

First, the profession must be very clear about its agency role. It must be very careful to avoid any attempt by vendors to influence its role as an agent for the patient. It should consider reforming any practices that could tarnish the agency relationship in the public's minds. That includes letting the pharmaceutical industry pay too much of the costs of meetings and education, avoiding bonus deals, and premiums and gifts (even if equipment is badly needed) that perceivably could warp the agency relationship.

The profession might also undertake to educate the public on the public's interests, to consciously provide advice that occasionally goes against the interest of pharmacies and assists the consumer to do better in drug purchase transactions. That may seem like shooting oneself in the foot, but it also might impress the public with the profession's disinterestedness.

The pharmacist has many unique skills. That is the other weapon in gaining professional autonomy. Again, the public must be convinced of this. Pharmacists must demon-

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DICKINSON'S PHARMACY

"...To quote the cult comic strip hero of the early 70's, Pogo: We have met the enemy and he is us..."

Pharmacy's real enemy. Pharmacists might not wish to hope for too much from the new Medicaid law that grew out of Senator David Pryor's well-intended and strongly supported "Pharmaceuticals Access and Prudent Purchasing Act" (or PAPPA for short).

As drafted, PAPPA would have eliminated pharmacy reimbursement injustices of the past decade. But as passed, all pharmacy got out of it was a four-year moratorium on new HCFA injustices, and a bunch of new headaches (read "opportunities").

The headaches (sorry, opportunities) are contained in a futuristic, on-line prospective and retrospective drug utilization review (DUR) system for pharmacists to administer in dispensing Medicaid prescriptions after January 1, 1993.

To quote the law's exact wording: "The program shall be designed to educate physicians and pharmacists to identify and reduce the frequency of patterns of fraud, abuse, gross overuse, or inappropriate or medically unnecessary care, among physicians, pharmacists, and patients, or associated with specific drugs or groups of drugs, as well as potential and actual severe adverse reactions to drugs including education on therapeutic appropriateness, overutilization and underutilization, appropriate use of generic products, therapeutic duplication, drug-disease contraindications, drug-drug interactions, incorrect drug dosage or duration of drug treatment, drug-allergy interactions, and clinical abuse/misuse."

There is, of course, no mention in the law of paying pharmacists to do any of this extra work–but then, there is no prohibition of it, either. The federal government will pay 75% of the cost, and the states will administer the program under detailed federal guidelines.

Although everyone is helping in good spirits to bring forth the most mutually advantageous mechanism by the deadline date, past experience suggests the expectations should be modest.

After all, a less grandiose scheme for another federal program–Medicare Catastrophic Drug Coverage–was abandoned at the last minute after enormous energies were similarly expended upon its preparation four years ago.

Then–and likely now, after reality sets in–everyone came reluctantly to the sad conclusion that it would all cost too much. Our nation's colossally expensive adventure in the Persian Gulf in the midst of a plunging economy suggests a fiscal repeat in this new program, as well.

There are signs that the nation's pharmacists are not going to be caught up a second time in the enthusiasm of their Washington representatives' good intentions.

There are signs that after 20 years of hoping for professional rescue by well-meaning Washington friends, pharmacists may be coming to the realization that only people who will rescue them from economic blight and bureaucratic oppression are they, themselves, alone.

To quote the cult comic strip hero of the early 70's, Pogo: "We have met the enemy,

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and he is us." That truism is being expressed in all walks of life, not just pharmacy, as government funding runs dry for health care, education, police protection, care of the environment, and a host of other shared needs that used to be–but no longer are–taken care of by "somebody else" (often, the government).

In pharmacy's case, this new self-reliance has taken the form of local action groups that operate independently of the major organizations.

One that has been tremendously successful is Texas pharmacist Bob Gude's Pharmacy Freedom Fund, which has been so effective that major organizations (sshhh!) quietly use it as resource themselves.

In California, aggressive tactics by the San Fernando Valley Coalition of Independent Pharmacists is succeeding in taking back prescription business lost to chains and dispensing physicians, by face-to-face pharmacist "detailing" efforts directed at local doctors, and by bold store signs.

In New York, petition forms displayed in pharmacies protested against high drug prices by manufacturers and within one month raised 35,000 signatures before snowballing into adjacent states. "It's been terrifically effective," said Long Island Pharmaceutical Society executive director Herb Mindlin, of the campaign.

According to Mindlin, the campaign converts price-embittered customers into active sympathizers with pharmacy, while simultaneously impressing politicians like nothing else can.

In many other ways, too, such localized actions are producing for previously apathetic pharmacists results that their professional organizations alone could not attain, for a variety of reasons.

Such reasons include the failure of pharmacists to join their state and local associations in the first place, and then, often, their failure as members to "get involved."

But when pharmacists are seen to be diversely involved, whether by gathering thousands of their customers' signatures, or provoking heartfelt mail from constituents who are equally diverse, or by joining in association campaigns, the action that ensues is usually most convincing.

In other words, Pogo was right. Pharmacy's real enemy is uninvolved pharmacists. "He is us." •

PROFESSIONALISM

Continued from page 20

strate their unique knowledge at every opportunity. For example, pharmacists ought to be taking unique positions on health issues and offering unique solutions to health policy problems. Their positions ought to be independent of the makers of the products that are distributed. They ought to occasionally go beyond pharmaceutical issues. And, they ought to be balanced. Educating the public to that point is key to maintaining the autonomy and respect of the profession.

In addition to the professional dichotomies pharmacists face, they must fight a continuing battle to avoid burnout and depression. As an earlier article noted, the career ladder is shallow. Professional status and income come early, but there is less to be gained over the years. As one young pharmacist recently told me, "I see my high school friends getting all these promotions and getting ahead and I'm still doing the same thing."

If you feel like the old Peggy Lee song, "Is That All There Is?" you have to generate new challenges and new opportunities for yourself, or else you let the profession down sooner or later. An earlier article discussed things that can help. You must adopt for yourself the concept of continuous self-improvement for your organization and yourself. If your can't, then change jobs. If you do that several times and it still doesn't work, examine 1) your level of expectations, 2) your acceptance of yourself outside of your professional persona, and if necessary, 3) your choice of professions. In the end, you are responsible for the definitive answer to the following multiple choice C.E. question:

The song that pertains to the you after 10-20 years in the profession is:

A. "Ain't Got Nobody"
B. "I Been Working On The Railroad"
C. "Is That All There Is?"
D. "Oh, What A Beautiful Morning"

References (3) available upon request. •

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NEW DRUGS, PART I: ANTI-INFECTIVES AND ENDOCRINE AGENTS



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Goals

The goals of this lesson are to identify and discuss new anti-infectives and endocrine drugs approved by FDA and/or marketed from late 1989 to the present.

Objectives

At the conclusion of this lesson, the participant should be able to:

1. exhibit knowledge of the drugs discussed by pharmacologic and therapeutic classification;
2. choose the indications, mechanism of action, benefits, and limitations of the drugs discussed;
3. identify adverse effects and drug interactions associated with the drugs; and
4. demonstrate an ability to counsel patients on these new drugs.

Two-hundred seventeen new molecular entities were approved for drug use throughout the 1980s, or an average of 21.7 each year. The mean time for FDA approval was 32.3 months. This dynamic activity resulted, in part, from goals set by previous FDA commissioners to put new drug approvals on high priority. There is optimism that this relatively short period for approval will be maintained in the future, thus assuring a constant supply of new and, hopefully, innovative pharmacologic agents.

The FDA classification system (Table 1) categorizes drugs on their probable therapeutic worth for the particular indication(s) that the manufacturer requested upon filing for a New Drug Application (NDA). The designation for each drug, when known, is provided within the text.

This article identifies new molecular entity drugs approved by FDA and/or marketed since late 1989. It discusses anti-infectives and endocrine drugs. The remaining new drugs will be discussed in Parts II and III of this series.

Anti-Infectives

Three cephalosporin antibiotics were approved in 1989: cefixime, cefmetazole and cefpiramide. This brings the total number of cephalosporins approved for marketing in the U.S. to twenty two. Cephalosporins are now the most widely prescribed of all antibiotics. A major reason for their popu-

larity is their wide spectrum of activity and low order of side effects.

Cefixime. (1C; Suprax). Launched in 1989, cefixime is claimed to be the first orally active third generation cephalosporin. Briefly, three "generation" classifications have been assigned to the cephalosporin group. Second and third generation cephalosporins have greater activity against Gram negative organisms than first generation drugs. Third generation cephalosporins have greater effectiveness against Pseudomonas than the other two. They are also resistant to degradation by beta-lactamase enzymes and, therefore, maintain effective antimicrobial action against cephalosporin-resistant bacteria.

Two such bacteria are *Haemophilus influenzae* and *Moraxella catarrhalis*, common causes of otitis media in children. It is largely this market, pediatric patients with middle ear infections, for which Suprax is targeted. It is claimed to be more effective against these organisms than amoxicillin and cefaclor (Ceclor), and at least equally effective as amoxicillin/potassium clavulanate (Augmentin).

Possibly the most significant difference between Suprax and previously available cephalosporins is its long biological half-life. This permits dosing children before they go to school, eliminating the problem of administering medication during school time.

Table 1
FDA New Drug Classification System

Chemical/Pharmaceutical Standing

1 = New chemical entity
2 = New salt form
3 = New dosage form
4 = New combination
5 = Generic drug
6 = New indication

Therapeutic Potential

A = Important (significant) therapeutic gain over other drugs
AA = Important therapeutic gain, indicated for AIDS patients; fast-track
B = Modest therapeutic gain
C = Important options; little or no therapeutic gain

From a pharmaceutics standpoint, unlike other cephalosporins, the oral suspension, after reconstitution, is stable for 14 days at room temperature. Additionally, the oral suspension is reported to be significantly more bioavailable than the tablets, producing 25 percent to 50 percent higher average peak blood levels. Some authorities recommend that tablets not be substituted for the suspension, and that only the suspension be used to treat otitis media.

The usual adult dosage for cefixime is 400 mg daily; some physicians prefer 200 mg every 12 hours. The recommended dose for children is 8 mg/kg/day (using the suspension), usually in the range of 50 to 200 mg once daily. Suprax is commercially available in 200 mg and 400 mg tablets and a 100 mg/5 mL suspension after reconstitution.

Cefmetazole (1C; Zefazone). Cefmetazole is a second-generation cephalosporin of the cephamycin group. It is indicated for susceptible infections of the intra-abdominal, lower respiratory and urinary tract, skin and skin structures. As for other cephalosporins, cefmetazole's mechanism of action is to interfere with cell wall development. Both the cephalosporin and penicillin antibiotics chemically resemble a component of the peptides that susceptible organisms use to build their cell wall during replication. When taken into the peptide structure, these antibiotics cause the organisms to form defective cell walls which are incapable of maintaining osmotic integrity. At the point of cloning during reproduction, the bacterial cell walls allow influx of excess water which causes them to burst.

Cefmetazole joins cefoxitin (Mefoxin) in the cephamycin category. These two agents contain side chains off the basic beta-lactam core structure which help resist destruction by beta-lactamase enzymes. This advantageously positions them against other second generation cephalosporins in a highly competitive marketplace. In fact, greater therapeutic activity and fewer total doses are the main points in promotion of cefmetazole.

The average dose of cefmetazole is 1 to 2

grams IV every 6 to 12 hours for 5 to 14 days depending on the infection, or 1 to 2 grams for 1 to 4 doses following surgery. Zefazone is available in 1 and 2 gram vials as a powder for reconstitution.

Cefpiramide (1C; no brand name assigned). Although approved by FDA at the time of publication of this article, the manufacturer had neither announced a brand name nor stated marketing plans, if any.

Fluconazole (1AA; Diflucan). Fluconazole is a broad-spectrum fungistatic agent indicated for treatment of oropharyngeal and esophageal candidiasis, and serious systemic candidal infections including urinary tract infections, peritonitis and pneumonia, and cryptococcal meningitis. It is a triazole, structurally related to the imidazole drug ketoconazole (Nizoral) and miconazole (Monistat). Fluconazole covers the spectrum of AIDS-related infections normally treated with amphotericin B (Fungizone), clotrimazole (Lotrimin), ketoconazole and nystatin (Mycostatin, etc.) It is more readily absorbed than ketoconazole and nystatin (Mycostatin, etc.) It is more readily absorbed than ketoconazole and has a much longer half-life allowing for once daily dosing.

In addition to its use in AIDS patients, the drug is also indicted for organ or bone marrow transplantation recipients, persons on chemotherapy, patients with decreased immune response such as rheumatoid arthritis victims who take immunosuppressant drugs (e.g., high dose corticosteroids), and others with a decreased immune response. Immunosuppression increases the likelihood of fungal infection.

Fluconazole specifically inhibits fungal cytochrome P_{450}, an enzyme essential to cell wall survival. It is responsible for the synthesis ergosterol, the principle sterol in fungal cell membranes. Without adequate ergosterol, fungal cell walls collapse and internal matter is lost. Fluconazole has minimal effect on normal bacterial flora, or on a range of cytochrome P_{450}-mediated reactions in human cells. Human cell membranes contain cholesterol, rather than ergosterol.

Fluconazole is less toxic than amphotericin B or flucytosine (Ancobon), and better tolerated than ketoconazole. Prior to approval in the U.S., fluconazole had reportedly been used to treat over 550,000 patients worldwide. There were only approximately 1.5 percent withdrawals from therapy because of adverse effects. Adverse reactions include ischemia, increase in pulmonary wedge pressure, ventricular tachycardia, bradycardia, hypotension, coughing, and itching.

The dosage regimen is 200 mg at once, and 100 mg daily for 2 to 3 weeks when treating candidiasis. For more serious diseases such as cryptococcal meningitis, the dosage is 400 mg to start followed by 200 to 400 mg daily for at least 10 weeks, possibly indefinitely in AIDS patients. Since tablets reach nearly the same peak plasma concentrations as IV Fluconazole, the dosage is the same by both routes of administration. Diflucan is available in 50, 100, and 200 mg tablets, and in 200 mg and 400 mg vials.

Ganciclovir (1AA; Cytovene). Ganciclovir is indicated for treatment of cytomegalovirus (CMV) retinitis in immunocompromised individuals including persons with AIDS. It is chemically related to acyclovir (Zovirax) but much more active against CMV.

The drug has demonstrated antiviral activity against at least five of the six herpes viruses: Human CMV, herpes simplex 1 and 2, Epstein-Barr virus, and varicella zoster virus. Compared to other antiviral drugs, ganciclovir is 8 to 20 times more active against CMV. However, safety has not yet been established for use in other CMV infections.

CMV retinitis is the most frequently encountered ophthalmic infection by opportunistic organisms in patients with AIDs, appearing in 15 to 46 percent of them. The term "opportunistic" describes organisms against which humans are normally resistant, but in an immunocompromised state, they become pathogenic. Untreated CMV retinitis can destroy the entire retina in less than 6 months, and almost always causes blindness.

Ganciclovir's mechanism of action is not completely understood, but it is believed to be due to selective inhibition of viral DNA polymerase. This inhibits viral DNA synthesis and terminates replication. Human DNA

polymerase is also inhibited but at a much lower level.

Ganciclovir is not viricidal and does not cure CMV retinitis. Maintenance therapy is still required, and even as such, reactivation of the disease has occurred in some patients.

Probenecid can reduce ganciclovir excretion by inhibiting renal clearance. Other drugs that inhibit cell replication can potentiate its toxicity, and should be used with it only if potential benefit outweighs the risks. Its manufacturer warns against concurrent use with zidovudine (Retrovir) because of the potential for granulocytopenia. Some clinicians report that with proper monitoring, concurrent administration of these two drugs is in the patient's best interest.

The dose 5 mg/kg IV infused over one hour (because of its high alkalinity) twice daily for 14 to 21 days with a maintenance dose of 5 mg/kg once daily, or 6 mg/kg once daily 6 out of 7 days. Cytovene is available in 500 mg vials to be diluted to 10 mL using Sterile (not Bacteriostatic) Water for Injection. Preservatives can precipitate and inactivate it.

Mefloquine (1A; Lariam). This antimalarial is a structural analog of quinine. Its mechanism of action is not completely understood, but mefloquine is believed to act by blocking parasites from invading erythrocytes.

Mefloquine is indicated for prevention of *Plasmodium falciparum* and *P. vivax* infections, and for treating mild to moderate acute malaria caused by mefloquine-susceptible strains of *P. falciparum* and *P. vivax*.

Mefloquine is recommended for persons traveling to areas where malaria is endemic. The dose is 250 mg per week, beginning the week before initiating travel, continuing through the trip and for 4 additional weeks, then reducing the dose to 250 mg every other week.

Patients with severe malaria should be treated first with an intravenous antimalarial drug. For *P. vivax* infections, following an initial treatment with mefloquine, primaquine must be given to clear the hepatic phase of infection, and prevent relapse.

Used in prophylactic doses, the most common adverse effects are vomiting, dizziness, fainting, and premature myocardial contractions. Central nervous system disturbance and vertigo are also reported. At larger (treatment) doses, adverse effects are indistinguishable from symptoms of malaria, including nausea, myalgia and dizziness.

Mefloquine must be used cautiously in persons taking quinine, quinidine or beta-adrenergic blockers because of increased potential for arrhythmias. Break-through seizures have been demonstrated when mefloquine is given to persons taking anticonvulsant therapy.

Lariam is available in 250 mg tablets. Tablets should not be taken on an empty stomach, and should be followed with at least 8 ounces of water.

Tioconazole (1C; Vagistat). Tioconazole is a broad-spectrum antifungal that inhibits growth of pathogenic yeasts. It is fungicidal against *Candida albicans*, other *Candida* species, and *Torulopsis*. The new drug competes in a $200-million market, with 6.5 million prescriptions annually. As with other imidazole antifungal agents, tioconazole interferes with ergosterol synthesis to inhibit proper fungal cell wall development, destroy its integrity and allow cell contents to escape, thus killing the organism.

Tioconazole vaginal cream joins clotrimazole vaginal tablets as a one-dose cure for vulvovaginal candidiasis, representing an advantage over other antifungals. Vagistat is available as a 6.5 percent vaginal cream.

Endocrine Drugs

Gonadotrophin Releasing Hormone (GnRH) Agonists. Also called LHRH (luteinizing hormone releasing hormone) agonists, GnRH is a naturally occurring decapeptide (10 amino acids) produced in the hypothalamus. It stimulates the anterior pituitary to release two gonadotrophins, luteinizing hormone (LH) and follicle stimulating hormone (FSH). The drugs released to the market in 1990 are nafarelin (Synarel), gonadorelin (Lutrepulse) and goserelin (Zoladex). An older drug, leuprolide (Lupron) has a similar pharmacologic profile.

Over 2000 GnRH analogs have been synthesized through systematic deletions and

replacements of one or more of the 10 amino acids. Synthetic analogs are better than natural hormones for use as drugs, because they are more potent and have extended half-lives. Natural GnRH has a half-life of 27 minutes; nafarelin, for example, has a half-life of approximately 3 hours. Half-lives of synthetic hormones are increased by substituting amino acids at enzymatic cleavage sites with D-amino acid, which renders than less likely to be degraded by enzyme activity.

Many are potent agonists and increase gonadotrophin secretion. Physiologic response depends, in part, on the mode of administration. Potential uses are numerous (Table 2). For example, short-term administration of gonadorelin initiates LH and FSH secretion, with resultant ovulation and increased steroid production. Chronic administration causes initial increased LH and FSH, followed by suppression of gonadotrophin release with resultant decrease in estrogen and testosterone secretion. With reduced secretion of sex hormones, tissues that normally depend on gonadal steroids for activity, become less active. This is the basis for GnRH activity in prostate cancer (goserelin), and endometriosis (nafarelin).

Endogenous GnRH is produced within neurons in the hypothalamus. It passes through the hypophyseal portal vessel system into the anterior pituitary. Here, it binds to receptors to initiate release of gonadotrophic hormones into the systemic circulation. These gonadotrophs, then, stimulate steroid synthesis with increased release of estradiol and progesterone from the ovaries in women, and testosterone from the testes in men.

The mechanism responsible for drug action is described as "down regulation" and "desensitization." The synthetic analogs have greater binding affinity for anterior pituitary receptors than the endogenous hormone. Nafarelin, for example, has a 10-fold higher affinity than GnRH. This potent binding decreases the number of receptors (down-regulation), and makes receptors less sensitive to stimulation (desensitization).

Nafarelin (1C; Synarel) is indicated for treatment of endometriosis, including pain relief and reduction in size and number of lesions associated with the condition. Use is limited to women 18 years of age and older for treatment up to 6 months. Repeated treatment is currently not recommended because of insufficient data to validate safety. Used for longer periods, the drug may lead to a significant reduction in total vertebral bone mass. During clinical trials, there was an average bone loss of 4.3 percent. While not overly significant in most patients, they should be warned of this potential. The drug is comparable to danazol (Danocrine) in relieving clinical symptoms of endometriosis, and represents the first new treatment of this condition in over 14 years.

Used regularly, nafarelin inhibits ovulation and stops menstruation. However, it

Table 2
Potential Therapeutic Applications for GnRH Analogs

Male	Female
Acne	Acne
Cancer (prostate, testicular)	Cancer (ovarian, breast)
Contraception (inhibit spermatogenesis)	Contraception (inhibit ovulation)
Cryptorchidism	Dysfunctional uterine bleeding
Hypogonadal-Hypopituitary insufficiency	Endometriosis
Precocious puberty	Fibrocystic breast disease
Protection from gonadotoxicity of chemotherapy	Hirsutism
	Polycystic ovarian syndrome
	Premenstrual syndrome
	Precocious puberty
	Uterine leiomyoma

cannot guarantee contraception. Therefore, sexually active patients who want to avoid pregnancy must use a nonhormonal method of contraception.

Missed doses may initiate ovulation, with potential for conception. The drug should not be used in women who are pregnant, or who may become pregnant while using it, or who are breast feeding.

The most common adverse effects are those related to hypoestrogenemia. These include hot flashes, decreased libido, vaginal dryness, headaches, mood swings, and insomnia.

Patients should be advised not to miss doses. If a topical nasal decongestant is being used concurrently, nafarelin should be used at least 30 minutes prior to the decongestant. The package must be stored upright to prevent air from entering the dip stick and affecting the dose. Refills should be obtained in advance to assure continuous administration.

The dosage regimen of nafarelin is one spray (200 mcg) in one nostril in the morning followed by another spray in the other nostril 12 hours later. Synarel is available as a 2 mg/mL solution in a 15 mL bottle. Properly used, this will supply 60 sprays—a one-month supply.

Gonadorelin (2C; Lutrepulse) induces ovulation in women with primary hypothalamic amenorrhea. The drug is administered by pulsatile intravenous injection, using the "Lutrepulse pump." By providing the agent in pulsatile fashion, this replaces defective hypothalamic GnRH secretion, duplicating the natural hormonal secretory pattern. If ovulation occurs with the pump in place, therapy should be continued for another two weeks to maintain the corpus luteum.

Goserelin (1C; Zoladex) offers an alternative treatment of prostatic cancer when orchiectomy (castration) or estrogen administration is not feasible or desirable. Results of controlled trials comparing goserelin with orchiectomy are similar. Both treatments are equally effective in increasing survival time.

The effect of goserelin in combination with flutamide (Eulexin) is still in question. Flutamide, launched early in 1989, is used in conjunction with LHRH agonistic drugs (such as leuprolide). The combination of flutamide and leuprolide extended survival 25 percent beyond the period for leuprolide alone, in one study. To date, the combination of flutamide and goserelin has not been investigated. Since the pharmacologic action of goserelin and leuprolide is the same, goserelin should demonstrate similar benefit when given with flutamide, as it does with leuprolide.

Goserelin may cause transient worsening of symptoms, with subsequent bone pain. These side effects should subside within a couple weeks. Other adverse effects include hot flashes, decreased libido, gynecomastia and impotence. Adverse effects are rarely severe enough to necessitate withdrawal of therapy. The drug in not cytotoxic, and can be disposed of in the same manner as other injectable drugs.

The dose of goserelin is 3.6 mg administered subcutaneously every 28 days into the upper abdominal wall. The formulation releases the drug continuously over that period. Zoladex is available as a sterile and totally biodegradable polymer-impregnated implant.

Norgestimate/Ethinyl Estradiol (1,4C; Ortho Cyclen). This new combination of progestin/estrogen was approved near the end of 1989. Norgestimate is new to the U.S., but has long been used in combination with estrogen in Europe as an oral contraceptive. Compared with current monophasic, biphasic, and triphasic formulations, the new monophasic combination appears to be equivalent in efficacy and safety. There is no evidence that this formulation provides clinical improvement over older ones.

The fate of the new combination remains questionable. Shortly after approval, a court restraining order was issued against its manufacturer by another, claiming infringement on the use of its own product. Analysts predict that resolution of legal issues could take considerable time.

Summary

This discussion of new drugs will continue in Part II of this series. •

CORRESPONDENCE COURSE QUIZ

New Drugs: Part I

1. FDA's classification system of 1A, 1B, and 1C for new drugs refers to the drug's:
 a. potential for causing birth defects.
 b. probable therapeutic worth.
 c. pharmacologic category.
 d. point of activity on the myocardium

2. The ability of cephalosporins to interfere with bacterial cell wall development is due to the fact that they resemble a component of bacterial:
 a. beta-lactamase.
 b. DNA.
 c. ergosterol.
 d. peptides.

3. Ganciclovir is believed to inhibit viral:
 a. alpha-lactamase.
 b. cytochromase.
 c. monamine oxidase.
 d. polymerase.

4. Gonadorelin, goserelin and nafarelin are similar in that they are agonists of which of the following naturally occurring hormone?
 a. ACTH
 b. ICSH
 c. LHRH
 d. TSH

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SEARLE

5. The agents referred to in question #4 above are indicated for treating all of the following diseases EXCEPT:
 a. amenorrhea.
 b. endometriosis.
 c. hypothyroidism.
 d. prostate cancer.

6. The cephalosporin with the longest biological half-life among those approved by FDA in 1989-90 is:
 a. cefixime.
 b. cefmetazole.
 c. cefpiramide.

7. Diflucan acts on susceptible fungi by inhibiting the synthesis of:
 a. beta-lactamase.
 b. DNA.
 c. ergosterol.
 d. peptides.

8. Patients receiving a prescription for Synarel should be intstructed on all of the following EXCEPT:
 a. store the package in an upright position.
 b. do not miss doses; it may take several years of therapy for noticeable improvement in your condition.
 c. spray the medication into one nostril in the morning, and spray a second dose into the other nostril 12 hours later.
 d. obtain refills before you run out of medication so that you do not miss any doses.

9. The drug that reportedly reduces ganciclovir's excretion by inhibiting its renal clearance is:
 a. furosemide.
 b. hydrochlorothiazide.
 c. probenecid.
 d. spironolactone.

10. Ortho Cyclen is classed as which of the following types of oral contraceptives?
 a. Monophasic
 b. Biphasic
 c. Triphasic
 d. Polyphasic

WELCOME, NEW MEMBERS!

The following pharmacists have become members of the NCPhA since the publication of our last journal issue. They join more than 2,600 colleagues in the Association who are committed to advancing pharmacy in North Carolina.

Samuel L. George, *Four Oaks*
Jill S. Hudson, *Siler City*
Paul F. Pomilio, *Verona NY*
Francina M. Rogers, *Asheville*
Wm. H. Francis, *Raleigh*
Tommy Ward, *Asheboro*
Christine G. Williams, *Durham*
John A. Grigg, *Charlotte*
Trudie Durden Grigg, *Charlotte*
Alfred D. Serpi, *Wilson*
Charles L. Flynn, *Clemmons*
Elizabeth Anne McHone, *Charlotte*
Quay H. Beck., *Hendersonville*
Gail Wiggins Drew, *Goldsboro*
Leslie R. Mackowiak, *Chapel Hill*
Jerry O'Neil William Jr., *Greensboro*
* **Dana Langdon McClure**, *Surf City*

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- Attach a mailing label from *The Carolina Journal of Pharmacy* or print your name and address and mail to: CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514.
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of Board-approved CPE credit.
- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

Please circle correct answer

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c	9. a b c d
		10. a b c d

Evaluation of material: Excellent Good Fair Poor

Name _____

Address _____



This column features news briefs about people and events related to pharmacy around the state. The NCPhA staff welcomes your comments and any contributions you wish to make to this column. Photos (black and white) are also welcome. Send us your news!

Weddings

Lydia Elizabeth Overton and Donald King Bulla, both of Asheboro were married September 22, 1990 at Central United Methodist Church in Asheboro. The new Mrs. Overton is a graduate of the UNC School of Pharmacy and a pharmacist for Revco Drug in Asheboro.

Janet Leigh Musten of Kernersville and Tony Lane Nester of Mebane were married October 21, 1990, in the First Baptist Church in Kernersville. The new Mrs. Nester is a graduate of the UNC School of Pharmacy and is currently employed as Pharmacy District Supervisor for the Rite-Aid Corporation.

Mary Elizabeth Sylvester and William Bryan Hargett III, both of Greenville, were united in marriage on October 13, 1990 at Richlands United Methodist Church. The new Mrs. Sylvester is a graduate of the UNC School of Pharmacy and is employed as a pharmacist at Kerr D.S. in Greenville.

Kathy Rose Hobson of Dunn and **John Parks Thomas** of Lake Waccamaw were united in marriage on November 3, 1990. The bridegroom is a UNC School of Pharmacy graduate. He is the owner of Riegelwood Mutual Drug in Riegelwood Shopping Center.

Laura Anne Clifton and Gregory Kent Allen were united in marriage on October 20, 1990, at St. Mary's Catholic Church in Wilmington. The new Mrs. Allen is a graduate of the UNC School of Pharmacy. The couple is residing in Winston-Salem.

Sheryl Lynn Denny and William Gerald Siek were united in marriage on November 17, 1990 at Camp Johnson Chapel in Jacksonville. The bride is a 1987 graduate of the UNC School of Pharmacy and is employed by Revco in Jacksonville. The groom is in the U.S. Marine Corps stationed at Camp LeJeune. He is currently deployed to Saudi Arabia.

Paula Louise Barfield of Weldon and Dr. Ashby Jeffries Burton III of Jackson were united in marriage at the Weldon Baptist Church on October 27, 1990. The new Mrs. Burton is a graduate of the UNC School of Pharmacy and is employed as assistant director of pharmacy at Halifax Memorial Hospital in Roanoke Rapids. The couple is residing in Jackson.

Heidi L. Bowden of Elizabeth City and Ted Thorton of Conover were married August 25, 1990. The bride is a 1988 UNC-CH School of Pharmacy graduate and is employed by Peoples Drug Stores. The couple resides in Virginia Beach, VA.

Births

Emery and **Kim Ashley** announce the birth of their second child, Sarah Clifton, on May 12, 1990. She weighed 8 lbs., 4 oz. Kim is a 1983 graduate of the UNC School of Pharmacy. She is employed by Thomas Drug Store in Dunn. Sarah has an older brother, Emery Jr., who is two years old.

Michelle Lener and Dennis Williams announce the birth of their first child, Samantha Bethany Lener Williams, on October 31, 1990.

Deaths

James Kenneth Godfrey, Murphy, died Thursday, October 11, 1990 at the age of 60. A graduate of the Southern College of Pharmacy, he was licensed by reciprocity in North Carolina in 1955. He had been employed at Parker's Drug Store and Murphy Medical Center Hospital Pharmacy during his years in Murphy.

Ray M. Ammons of Red Springs died December 12, 1990 at the age of 63. He was a co-owner and pharmacist-manager of Townsend Pharmacy in Red Springs where he worked since his graduation from the UNC School of Pharmacy in 1955. Ammons was a veteran of the U.S. military.

Hubert G. "Pop" Price, Raleigh, died January 31, 1990 at the age of 79. In 1938, Price started the first pharmacy at Rex Hospital in Raleigh. He served there for 38 years until retiring in 1976. He was charter member of the NCSHP and ASHP.

Earl Henry Tate, Lenoir, died October 2, 1990 at Caldwell County Hospice. Tate was Mayor of Lenoir and served in the NC General Assembly for several sessions. He was associated with community pharmacy all of his life and he was the 1969-70 NCPhA president.

In The News

The **Womble** family—Louise Nyal Watson, Joseph Edward and Logan Nyal II—celebrated the fiftieth business year of Womble Drug Co. in Plymouth which was started by their father, Logan Nyal.

Henry R. Herring, Wilmington, has opened Medical Center Pharmacy in Wilmington.

After 25 years of waiting, **Phil Link** of Reidsville has published his novel, *Another Time—A fictional story of the truth about fraternities at Chapel Hill in the 1930's.*

Honors, Awards, Citations

S. Duane Tester, a 1987 UNC School of Pharmacy graduate, has been promoted to Pharmacy Supervisor with Kaiser Foundation Health Plan of N.C. He is the Pharmacy Supervisor at the New Bern Avenue Medical Office in Raleigh. He was previously a pharmacist at the East Charlotte Office. He and his wife, Laurie, reside in Cary.

Kerr Drug Stores of Raleigh, was the recipient of the 1990 Retail Excellence Market Maker Award based on voting of the retail drug industry conducted by *Drug Store News Magazine*. Kerr won in the "Small Chain of the Year" category.

Anderson Drug Store owner, **Eugene G. Anderson** of Elizabethtown, and Riegelwood Mutual Drug Store owner **John Parks Thomas** of Lake Waccamaw have been recognized as independent pharmacy superstars in the October issue of *Drug Topics*. They are among the 275 names on the "Independent Superstars of 1990" list from across the U.S. Anderson's store was recognized for "overcoming competition" and Thomas' store was recognized for "exceptional performance."

Appointments

Bruce R. Canaday, Wilmington, a clinical associate professor for the UNC School of Pharmacy, has been elected Chairman-elect of APhA's Clinical/Pharmacotherapeutic Practice Section



Richard G. Dameron, Tabor City, has been appointed to the local board of directors for Southern National Bank of N.C. Dameron is a partner with Dameron Drug Store Inc. He is a past president of Columbus County Pharmaceutical Association and Tabor City Chamber of Commerce. He served on the Columbus County Board of Education from 1978 until 1990, and is a trustee at Southeastern Community College in Whiteville.

W. Whitaker Moose of Mt. Pleasant was elected to a new office, that of Secretary-Treasurer—of NARD at the Annual Convention in Nashville TN.

Suzanne Conner of Winston-Salem, Chairperson of Davidson County's Board of Health, was appointed as Secretary Pro Tempore for the Board of Directors of the Association of N.C. Boards of Health.

Jan D. Hirsch, Durham, has been elected Member-at-Large of APhA's Economic, Social and Administrative Sciences Section. Hirsch is assistant director of pharmacoeconomics at Glaxo Inc.

Local Association News

The Gaston County Pharmaceutical Association participated in "Talk About Prescriptions Month" and "North Carolina Pharmacy Week" for the first time since its formation in 1989. The organization disseminated information about these professional events via radio stations, newspapers and pharmacies throughout the county.

The Western Carolina Pharmaceutical Association met October 21, 1990 in Asheville with a dinner and lecture on "Inhalation Therapy for Pulmonary Disease" sponsored by Glaxo Inc. The lecturer was George E. Methvin, Chief of Pharmacy Services, VA Medical Center, Asheville. Forty-three pharmacists attended the meeting. •

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Classified advertising rates are 25 cents a word for members with a minimum of $5.00 per insertion and for nonmembers, classified ads are 50 cents a word with a minimum charge of $10.00 per insertion. Ads are accepted for a single issue or specific time period only. The closing date for ad orders is the first of the month preceding the issue in which you are requesting insertion. Payment for ad orders will be billed. Names and addresses will be published unless an ad number for a blind ad is requested. In replying to blind ads, send to Ad (), c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. Telephone 800-852-7343 (in state) or 919-967-2237.

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Relief Pharmacists

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Miscellaneous

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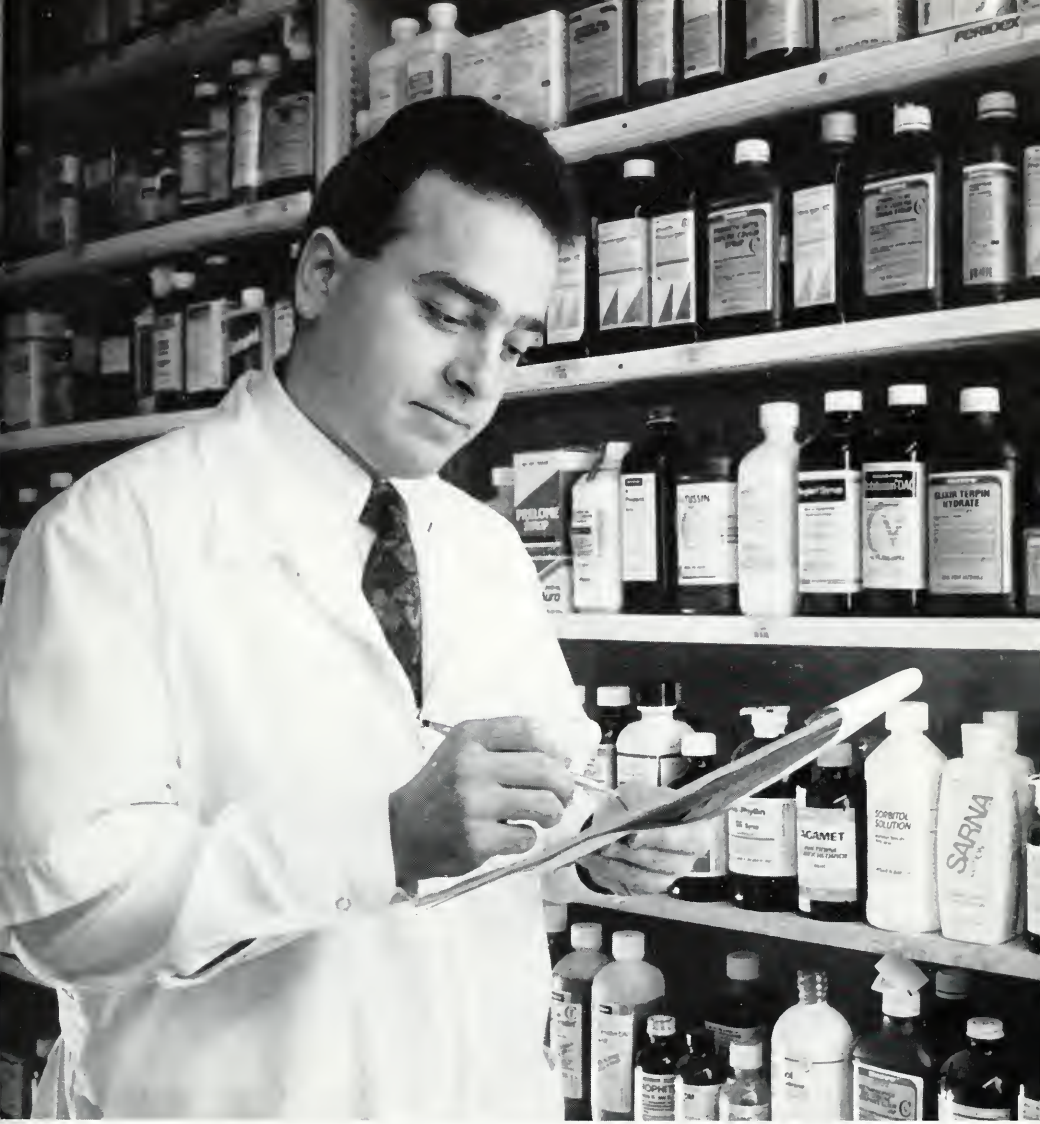
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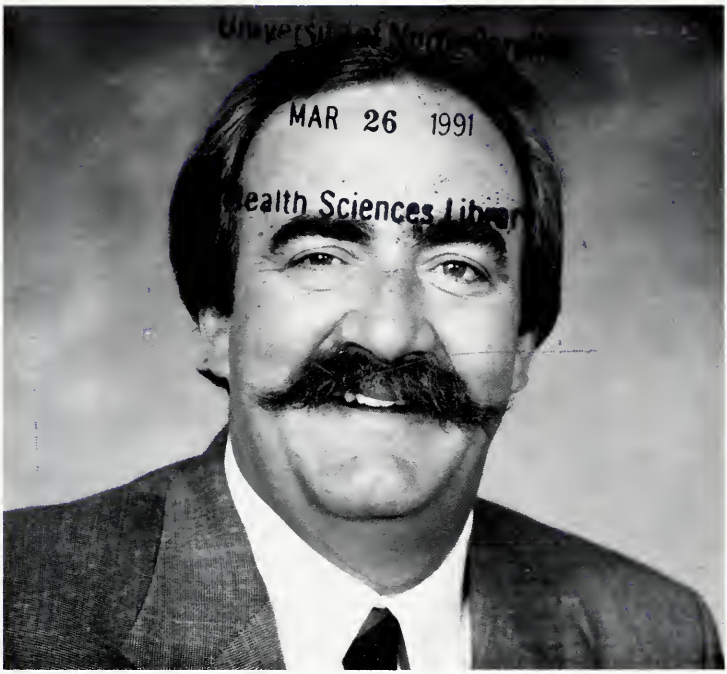
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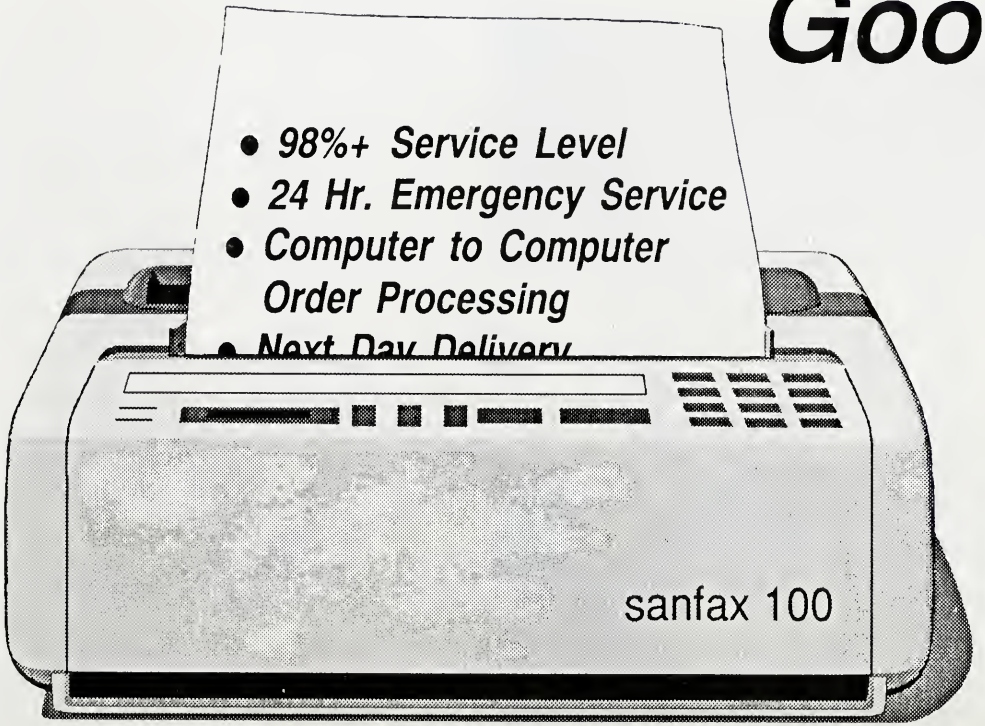
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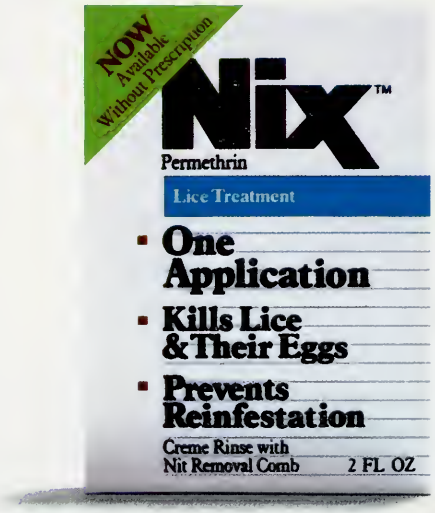
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Officers
North Carolina Pharmaceutical Association

President
J. Frank Burton
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Vice Presidents
Betty H. Dennis
104 Calumet Court
Carrboro, NC 27510
919•962•0030

Joseph A. Edwards Jr.
2025 St. Mary's Street
Raleigh, NC 27608
919•833•7558

Henry L. Smith
P.O. Box 147
Farmville, NC 27828
919•753•7111

Journal Staff

Editor
Alfred H. Mebane III

Managing Editor
Kathryn K. Jefferson

Editorial Assistants
Erie C. Cocolas
Terri M. Little

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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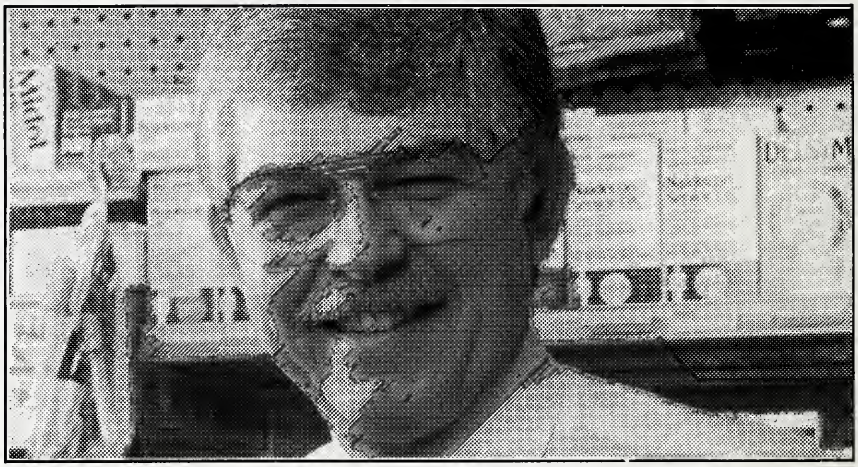
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THE PRESIDENT'S PAGE

J. Frank Burton
NCPhA President

"All For One, One For All"



I have recently returned from the Annual Pharmacy Leaders Forum organized and sponsored by the N.C. Board of Pharmacy and held each year in Southern Pines, NC. Once again, the Board members and staff did an outstanding job of bringing together a group of pharmacists that have served in various leadership roles from all areas of pharmacy practice in North Carolina. Attendees included representatives from: N.C. Board of Pharmacy; UNC School of Pharmacy; Campbell University School of Pharmacy; NCPhA; N.C. Society of Hospital Pharmacists; chain drugstores; pharmaceutical wholesalers; pharmaceutical manufacturers; and pharmacy students. The agenda topics discussed will be reported on in the April issue of *The Journal.*

What I want to stress about this meeting is how extraordinarily fortunate we are in North Carolina that the leaders of all these different pharmacy groups are so intertwined by virtue of their mutual involvement in NCPhA and other endeavors such as the NC Pharmacy in the 21st Century Commission. As we gathered in Southern Pines for the seventh straight year, perhaps the most remarkable thing about this meeting is how many attendees could have just as easily been representing some other organization than the one they were "registered" as representing.

While we have recognized for many years that this "crossover" in pharmacy leadership in North Carolina has been a major factor in enabling the kind of dialogue that we have in this state, perhaps many North Carolina pharmacists have come to take for granted this unique situation.

There are not many states that could hold a meeting like the Leaders Forum without fear of major bloodshed, much less hold it routinely every year with the natural expectation that those attending will discuss openly and honestly their opinions on a wide range of topics, all the while holding as paramount the pharmacy profession as a whole over the interest of any one group.

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THE NORTH CAROLINA INSTITUTE OF PHARMACY A HISTORY AND COMMENTS

by Al Mebane

(Special thanks and recognition to W. J. Smith, Executive Director Emeritus, for his research and efforts which made much of this article possible. Parts were taken in total from an address made to the Fall Convocation of the Woman's Auxiliary in 1985).



"It is my belief that this Association should immediately undertake a program looking towards the eventual establishment of a permanent building to house the offices of the Secretary–Treasurer, as well as all records pertaining to the Association and *The Carolina Journal of Pharmacy*. The building should be located in a central place for committees, delegations and the like." From the report of the Secretary–Treasurer, W. J. Smith, at the 1944 Annual Convention of the NCPhA.

From this beginning, the idea of a home for the NCPhA and all its accompanying records and artifacts was born. The office of Secretary–Treasurer of the NCPhA had been held by Dean J. Grover Beard of the UNC School of Pharmacy from 1912 until 1940, when W. J. Smith was employed as Secretary–Treasurer of the NCPhA and Managing Editor of *The Carolina Journal of Pharmacy*. The School of Pharmacy provided space in the basement of Howell Hall at no charge to Mr. Smith for the next ten years, probably unknown to the state auditor.

As the membership grew and more services and programs were made available, additional office space was required. The School of Pharmacy needed the space occupied by the NCPhA, so a more permanent setting was obviously needed.

Initially, the Association's Executive Committee authorized Secretary Smith to explore the feasibility of the NCPhA undertaking the purchase of property suitable for location of an NCPhA–owned building. At the same time, the committee stated such project must be separate and apart from the NCPhA budget.

The location of the NCPhA office building was decided on the basis of a mail ballot sent

to all members of the NCPhA. The ballot offered three choices: (1) Chapel Hill; (2) Raleigh; and (3) Other Locations. The majority of members responding designated Chapel Hill as their preference for the location of the building.

Fund Raising

Solicitation of funds for purchase of property was begun. Letters were sent to the membership resulting in contributions of about $25,000, most of which came from $100 payments qualifying the donors to have their names on a bronze plaque in the building. The first donation was $50.00 from A. Coke Cecil of High Point, in March of 1944. Through 1947, a total of $13,400.00 had been raised through contributions, various fund raising activities of the members of the NCPhA, the Woman's Auxiliary and the TMA. By the end of the next year, the cash total was approximately $32,000.00. The building committee authorized the purchase of a lot adjacent to the original University Baptist Church, at the corner of Church and West Rosemary Streets. The property was about 26,000 square feet, providing room for a building and parking. The price was $12,500, not a tenth of the current valuation.

An architect, Archie R. Davis, Durham, was retained and plans for a Williamsburg-style building were approved by the Executive Committee. The town of Chapel Hill attempted to develop the western end of town as a "Miniature Williamsburg", but the attempt fizzled. Bids were requested and all those received exceeded the cash on hand. A Chapel Hill contractor, Ardenta Thompson, offered to begin the construction without a contract, believing the exterior of the building could be constructed with the available funds. The estimated cost was $40,000.00, which did not include air conditioning or furnishing the kitchen and general reception room.

The ground breaking ceremony took place on November 2, 1950. Tom Ham of Yanceyville, Chairman of the Building Committee; W. R. McDonald Jr, Hickory, NCPhA President; and Paul Gamble of Monroe, NCPhA President-Elect, participated in the ceremonies, with an audience of the NCPhA staff and other interested persons. While the building was under construction, $10,000 in additional funds was received, allowing interior doors, floor coverings, kitchen cabinets and appliances to be added.

Early plans called for the building to be completed June 1, 1951. Because of monies not expected, additional work was done and the staff moved into the building in August, 1951. The floor of the J. Grover Beard Auditorium was finished wood and folding metal chairs were used for meetings. The first official function in the Institute was a meeting of the Woman's Auxiliary on September 5, 1951. At a luncheon hosted by the Woman's Auxiliary, attending were members of the Executive Committee of the NCPhA, local officers of Auxiliary chapters and invited guests. Retiring Professor of Dispensing Pharmacy I.W. Rose was honored with the presentation of a book of letters from associates, friends, colleagues and former students.

Over the years, many organized groups, and others not so organized, have contributed money, time and imagination to the



Excavation and waterproofing of the basement.

furnishing and maintenance of the Institute of Pharmacy. Local auxiliaries and local pharmacy associations have raised funds specifically for their pharmacy home in Chapel Hill. The Woman's Auxiliary has been a major contributor to remodeling and renovation efforts over the years, and this commitment continues today as they prepare to refurbish the Beard Auditorium, including painting and installation of a new carpet, all approved and endorsed by the NCPhA Executive Committee.

The first permanent seating in the auditorium consisted of wooden "classroom" style seats, with fold-over arm or book rests, bolted to the floor. The seats were utilitarian, but being fixed, limited the use of the auditorium. These seats were purchased through solicitation of the membership, with the 107 contributors names on a commemorative plaque mounted in the auditorium. They were used from 1952 to 1972, when they were replaced through the efforts of the Woman's Auxiliary and a committee headed by Mrs. Cade Brooks. In December 1972, a ceremony was held at the Institute at which the Woman's Auxiliary turned over the auditorium with new carpet, new movable chairs (still in use) and redecorating to the Association.

In 1985, yet another project of the Woman's Auxiliary was the redecorating of the halls and lobby of the Institute. New furniture, wall-to-wall carpeting and wall coverings were provided by them, at an expense of more than $15,000, over two-thirds supplied by the Auxiliary. Mrs. David R. Work headed the committee that accomplished this task. In 1988, the Auxiliary renovated the women's rest room at the same time the men's facility was being done. In January of 1987, a new roof was put on the building at a cost of slightly over $10,000.00 which included removal of the old roofing material.

Repairs

The Executive Committee, alarmed about the increasing water in the basement, authorized Sparrow Construction Company of Raleigh to undertake an extensive waterproofing project totaling almost $50,000, about what the building originally cost. Included in the contract were excavation around half the building, waterproofing down to the base of the foundation, installation of exhaust fans under the building and in the attic, and many vents in the attic to improve circulation. Painting and other routine maintenance was covered. During the digging around the foundation, an abandoned fuel oil tank was discovered. As required by EPA, the tank was pumped out and the contents disposed of in the appropriate manner. The tank was cut up and hauled away. The surrounding soil was tested and found contaminated, requiring disposal of two large truck loads of dirt. Additional dirt was brought in to fill up the hole and also to raise the slope of the ground around the building for better drainage. Removal of the tank added another $10,000 to the cost, unbudgeted, of course.

Use of the Building

Over the years, the Institute has been used by many pharmacy and non-pharmacy organizations. From the beginning, the North Carolina Board of Pharmacy occupied about one-half of the street level floor. In 1965, the Executive Committee began looking into the feasibility of enlarging the Institute, to provide more space for the Board. In 1966, Mr. H. C. McAllister, Secretary of the Board, wrote W. J. Smith a letter in which he remarked "Pharmacy in North Carolina is the best in the Nation. No small part of this result can be traced to the effective relationship which has existed between the Association and the Board. The Board does not desire to disturb in any way this relationship, as a physical separation is bound to do...." Over the next few years, various plans were developed to provide more room, through raising the roof and finishing the second floor, or by adding to the building on the street level, but eventually, all were judged too expensive or impractical, partly because of the town's restrictive building code. The Board, a tenant for almost twenty-five years, re-located to Orange Federal Savings and Loan, a block down West Rosemary Street, early in 1975.

Even after moving, the Board continued to

use the auditorium for examinations, until the numbers got too big to be accommodated, and still meets every two months for its reciprocity hearings and examinations. Public hearings are also held in the building by the Board. Most of the first twenty Seminars on the Socio-Economic Aspects of Pharmacy Practice were held in the Beard Auditorium, also used by students of the UNC School of Pharmacy for faculty and orientation receptions. The Chapel Hill Men's Garden Club and the Chapel Hill Rose Society both use the auditorium for meetings in exchange for assisting in caring for the roses and other plants on the property. The Institute has been used to hold church meetings, wedding receptions, fund raising card parties for local charities and assorted professional organizations have used the facilities. The North Carolina Society of Hospital Pharmacists regularly holds its committee and Executive Board meetings in the Institute, the NC Memorial Hospital Auxiliary has met here as has the local American Cancer Society. Of course, the NCPhA committees usually meet here because of the central location and availability of records. The Woman's Auxiliary, state and local, use the Institute of Pharmacy on a regular basis, holding their Fall Convocation and other committee meetings here. The North Carolina Pharmacy Foundation, Inc. and the North Carolina Pharmaceutical Association Endowment Fund Executive Committees are fond of meeting in the Institute at least annually.

The North Carolina Institute of Pharmacy is certainly a tribute to the spirit of Pharmacy in our state. From the generosity of pharmacists, pharmacy associations and other friends of Pharmacy, and the efforts of pharmacy leaders to make it a reality, this tremendous asset to the profession has had an impact on all of Pharmacy. We thank all who have contributed recently, or in the distant past, to the success of the Institute. This *is* your Pharmacy home away from home. •



The completed Institute. Note the absence of shrubs and trees, and the church next door.

INSTITUTE OF PHARMACY REPAIR FUND
CONTRIBUTIONS AND PLEDGES

These are the pharmacists and companies who have made contributions and pledges to help pay off the note for the repairs to the Institute of Pharmacy. The listing is compiled as of March 1, 1991. Contributions received after this date will be acknowledged in a future issue of *The Carolina Journal of Pharmacy*. All contributors of one hundred dollars or more will be recognized on a permanent plaque to be installed in the lobby or auditorium of the Institute. You may add to your contributions at any time before the plaque is cast.

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Every effort has been made to ensure accuracy and completeness in this first listing. If you have been omitted from this list of contributors, please call the NCPhA office and let us know. The next publication of contributors will appear in the May issue of The Journal.



The Institute of Pharmacy in early 1951, looking north, barely above ground.



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JAMES C. MCALLISTER TALKS ABOUT HIS ASHP PRESIDENCY, SHARES HIS VIEWS ON PROFESSIONAL ISSUES

James C. "Jim" McAllister III, Director of Pharmacy, Duke University Medical Center, Durham, has been serving as the 1990-91 president of the American Society of Hospital Pharmacists (ASHP) since June 1990. NCPhA Executive Director Al Mebane and Kathryn Kuhn Jefferson, Director of Professional Affairs, recently visited with Jim McAllister to discuss his experiences as president of this national pharmacy organization. When his presidential term ends this coming June, McAllister will continue to serve ASHP for one year as Chairman of the Board of the ASHP Research and Education Foundation. This position will be part of his duties and responsibilities as past president of ASHP.

Jefferson: Each organization expects its president to perform in a unique way. Describe your duties and responsibilities and term of office as president of ASHP, and how you have represented the organization as its president?

McAllister: First of all, I am the mouth piece, the spokesman for ASHP. Thus, I get to do a lot of the formal sorts of things that emerge from a collaborative effort between the ASHP Board and the ASHP staff. The two most important responsibilities are: 1) to help set the agenda for a year and decide what has priority and then 2) follow up with each agenda item and make sure progress is made on each one. Another large responsibility is to chair the Board. I was a bit surprised that a chairman of the Board functions as its leader by pulling the Board together and making sure that it moves the organization forward, rather than coming to the table with my own agenda.

Jefferson: ASHP has approximately 24,000 members, which is roughly 15% of our country's pharmacists. As president of this relatively large organization you have had a tremendous opportunity to make a substantial impact on the profession of pharmacy. What have you tried to accomplish during your ASHP presidential year?

McAllister: My focus or the theme I have been promoting during my year as president of ASHP has been *involvement* and *participation*. ASHP members need to make their opinions heard and be recognized by the people who have the vote or who take the suggestions to the table or whatever. Members should not think of themselves as just one of twenty four thousand. Part of my message has also been to attract new members by increasing ASHP's appeal. The organization has tried to accomplish this by doing more and more different things which will be valuable to a whole host of people whose primary practice may not be in a large hospital like Duke Medical Center. With more committed members we are more likely to do the right thing at the right pace. I am going around the country preaching collegiality—working with your colleagues no matter where they practice. I think that my focus on membership, working together, and being a more active member is fundamental that as past president I am going to try to make sure stay on top of the agenda.

Mebane: What can a large pharmacy organization like ASHP offer its members? How can one become involved in such a large organization?

McAllister: Besides the obvious things that ASHP has to offer, like continuing education programs, I believe the greatest benefit ASHP has to offer is to be an advocate for its individual members—by establishing guidelines or practice standards by which individual pharmacists might practice or by representing them or being their advocate on Capitol Hill in terms of federal legislation. Another way in which ASHP serves its members is that of a facilitator. That is, ASHP facilitates opportunities for its members to develop professional networks. Members can discover what they have common with whom and learn from them. It begins with something as fundamental as reading *AJHP*. Members should read the ASHP journal every month to stay attuned to the deliberations of all our policy recommending bodies like the Councils. This way, mem-

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bers can participate simply by writing to ASHP officers or paid staff to voice their opinions on particular policies or issues. A huge organization like ASHP may not appreciate the subtleties of legislation or regulations as they are initially proposed. It is also important to keep in mind that as individuals we will have a very minuscule impact on decisions concerning the health of the public at large, but powerful organizations like ASHP and NCPhA can affect these decisions. This is where professional organizations really become valuable.

Mebane: What will be the impetus to finalize the entry-level degree question (B.S. versus Pharm.D.) now that ACPE has made clear its intention to revise existing accreditation standards within the framework of a sole entry-level Pharm.D. degree for the year 2000?

McAllister: My biased opinion is that a variety of practice alternatives, be it community pharmacists or institutional-based pharmacists for example, will begin to realize that the majority will agree with the Pharm.D. degree, including the extra year of education. Formal recognition of the Pharm.D. degree will help us to be acknowledged by the public and policy makers for the "clinical" services that we provide. I believe the Pharm.D. degree will help us "over the hump." I believe our future is in interacting with patients and really overseeing drug therapy. I think we are going to get recognized and paid for our services. But as Inspector General Kusserow and others have said, we have to show that we really are providing these services and earn our keep.

Jefferson: Today, we are seeing a trend towards more specialization in the pharmacy profession. For example, the Board of Pharmaceutical Specialties (BPS) now offers several certification exams in different pharmacy specialties and ASHP now offers its members the opportunity to become involved in Specialty Practice Groups (SPGs). Why do you think this has occurred and how will it continue?

McAllister: In terms of the formal recognition of pharmacy specialties, I think the data is still unknown at this time. ASHP cosponsored two specialty petitions. One is nutrition which has been approved by the BPS. The other is pyschopharmacy which is currently undergoing evaluation. ASHP's effort to create and maintain SPGs was one effort towards meeting the educational needs of people who did have a unique practice. Like any other organization, ASHP is faced with the dilemma of trying to meet all the needs of all its members. But the SPG structure was put in place solely for the purpose of offering personal network capabilities and very high level educational programs for those kinds of specialists.

Jefferson: What factors of change do you think will exert the greatest influence on pharmacy practice over the next ten years?

McAllister: I think the first and most important factor will probably be whether individual practice disciplines in pharmacy can begin working together more cooperatively than in the past. We need to try for consensus within the profession on given issues. This is going to have a profound effect on our ability to move the profession forward or raise the profession in terms of an outsider's perspective on what we have to offer. The second most important factor is the reimbursement issue. That is, being able to document and then be recognized for the value of services we provide. Drugs are the best deal in health care today in terms of dollar per benefit. But, we've done a miserable job of communicating that to the public and to the decision makers. A third factor is industry. The pharmaceutical industry is going to make our life much more difficult since pharmacy is a profession that takes the hit for increased drug costs when we don't establish what drug costs are. However, this may be an opportunity for pharmacy—to ensure that drugs are prescribed cost effectively.

Mebane: How do you envision pharmacy practice in the 21st century?

McAllister: I think what we are going to see is a more collegial and collaborative practice. I see community pharmacists, home care pharmacists, and institutional pharmacists developing communication systems where we all share information on behalf of a patient. For example, we will have a mechanism devel-

oped so that I can give a brief overview of what your patient presented and transfer that information to the community-based pharmacist, perhaps through the home-care pharmacist. Similarly, when one of the community pharmacists' patients is about to be admitted to Duke I see them transmitting information to us. I see a physician referral-type network evolving where we really do assume total responsibility for our patients' drug therapy and communicate effectively from the patients' homes to the hospitals to the skilled nursing facilities or wherever.

Jefferson: What advice do you have for pharmacists and for pharmacy students—our pharmacists of the future?

McAllister: I think pharmacists need to be more vocal and more proud of what they are and what they have to offer. Pharmacists need to be proactive and begin to educate the lay public about what we contribute to their own personal health. I think I told a class last week that pharmacy is not a part-time profession. It is not one you can dabble in. I think there is a constant demand to continue to educate yourself and be prepared for the kinds of patient drug management problems that will confront you. And I guess last, but certainly not least, is we have to put down our swords on the major issues and reach consensus on the big issues, recognizing that we are going to agree to disagree on some issues. On the big issues, however, we are have to be together—not just at the national level, but all the way down to the individual practice level where the community pharmacist respects what I do because of the contribution that I make and vice versa. This lack of collegiality is killing our profession. I don't think that we have more than the rest of this decade to fix that problem, and if we don't we are in big trouble.

Jefferson: What do you think contributed to the development of your leadership skills and prepared you for the ASHP presidency?

McAllister: Well, it began with Milton Skolaut and Fred Eckel. They really were role models in terms of helping me realize the benefits of being an active participant in associations. They impressed upon me that associations are good and can benefit not only the individual, but one's institution, and hopefully the profession. The satisfaction of doing a national presentation or publishing in a national publication also got me interested in furthering my involvement in associations. I guess the earliest experience I had on the national level was serving on an ASHP Council which continues to be one of the best things that I was ever able to do. I really felt like I made a difference. I have also had an opportunity to participate in state associations as an officer and as a member of NCPhA committees. In our profession, it's rare that we actually see the fruits of our labor, especially in a hospital setting, where we make people well, but we really don't know whether our patients are O.K. two months from now. In association work, however, one actually sees the results of one's work. And you begin to realize that you do make a difference.

Mebane: What has been the best aspect of being president of ASHP?

McAllister: It has given me some unique experiences such as testifying before Congress or meeting the executive officers of various other pharmacy associations—people that I would not have otherwise gotten to know. Certainly, I have gained a better picture of how associations work and what their strengths and limitations are. The brightest moment since I was elected was at the reception given in my honor by pharmacists from N.C. during the 1990 ASHP Annual Meeting. Since I've been president, I get to go all over the country. I have learned that nobody is better off than N.C. pharmacists. I don't think there is any state close to where we are. In N.C., pharmacists from various practice settings respect one another and we try to work together on the big issues. N.C. pharmacy is on the leading edge and will continue to be because of the way we work together. For Jim McAllister, personally, the best thing about being president is that I am a smarter person and a better practitioner. In addition, being an ASHP president really has renewed my commitment to the profession of pharmacy. •

FROM THE MAILBAG

NCPhA PUTS CAP ON COCA-COLA MAIL ORDER PLAN

January 8, 1991

Mr. Jim Moore, President & CEO
Coca-Cola Bottling Co. Consolidated.
P.O. Box 31487
Charlotte, NC 28231

Dear Mr. Moore:

On behalf of the over 2,600 members of the North Carolina Pharmaceutical Association, most of whom practice in the retail community pharmacy setting, I would like to express our concern over Coca-Cola Consolidated's decision to require, as part of its' employee benefits package, that all active and retired employees obtain their prescriptions for maintenance medications through a mail order prescription program.

Our members feel that mandatory mail order prescription plans violate an individual's basic right to choose from whom they will buy goods and services. By denying your employees this freedom of choice to get any type of prescription filled at their community pharmacy, you are also denying them the opportunity to get the type of quality pharmacy services that can only be rendered by the local pharmacist that knows them and their families, keeps a profile of all their medications that monitors for potentially dangerous drug interactions (something he cannot do if part of that patient's prescriptions are being filled by mail order), and who is also often aware of any over-the-counter drugs or special dietary restrictions that can cause adverse reactions with prescription drugs.

We must also question Coca-Cola Consolidated's sensitivity to an issue (mail order prescriptions) that is perhaps the single greatest threat to the economic well-being of retail community pharmacies, a sector of the retail industry that I need not remind you accounts for a very large portion of retail soft drink sales in your market area.

Thank you in advance for your attention to our concerns. I will look forward to sharing your response with our membership.

Sincerely,
J. Frank Burton
President, NCPhA

January 28, 1991

Mr. J. Frank Burton, President
N.C. Pharmaceutical Association
P.O. Box 151
Chapel Hill, NC 27514-0151

Dear Mr. Burton:

In the past few weeks, I have personally met with or talked to a number of executives representing retail pharmacies. I understand and appreciate the concerns that they expressed to me. I believe, however, that there are steps we can take to alleviate your concerns about the health care plans which we provide to our employees and retirees.

First, our active employees, effective March 15th, will have the option of continuing with the mail order program or dealing with their choice of retail pharmacies for their maintenance drug needs. We are making this change in response to the concerns expressed by a number of your members. We have certain obligations to Baxter-Travenol, as well as some internal administrative issues to clear up, which is why the change cannot be implemented sooner.

Continued on page 22

FOR AMERICA'S PHARMACISTS WHO ARE TEACHING BY EXAMPLE.



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FROM THE MAILBAG

Continued from page 19

Second, our rationale in offering the mail order program for maintenance drugs only is an attempt to deal with the explosive increase in health care costs for retired employees. You are probably aware that the issue of health care costs for retirees is a very serious one, and it appears likely that the FASB will require estimating the future costs and putting that amount on our books as a liability, thus reducing stockholder's equity.

Third, we are more than willing to entertain competitive proposals from members of your association for our health care plans in the future. Any member wishing to make a proposal should contact Mrs. Fritzen in our Human Resources Department at (704) 551-4583.

Best regards,

James L. Moore
President and CEO
Coca-Cola Bottling Co. Consolidated



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KEEPING YOUR OLD CUSTOMERS

This is the fourteenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

You know how hard and costly it is to bring in new customers. It stands to reason, therefore, that you should be willing to spend a lot to keep old ones. Many of us learned, "A bird in hand is worth two in the bush." Actually, the profitability of existing customers is more like three or four times that of new ones, rather than twice. Reducing customer defections by 5% can increase profits by 25% to 85%.[1] Yet, few service organizations go about keeping their old customers with the same energy they show in recruiting new ones.

Often one gets a clear signal when a new customer arrives. A new patient record is set up or a coupon is brought in. With that knowledge it is easy to celebrate that new customer then and there. Fewer and weaker signals are emitted when an old client leaves. An account or record merely stays inactive. The organization must listen much harder to be responsive.

Identify Defecting Customers

You must be willing to spend time and energy trying to identify your lost customers. There are several steps:

1. Assume that a complaining customer is a lost customer.
2. Consider a guarantee for your services.
3. Monitor your customer activity carefully.
4. Do spot checks one way or another.

A lost customer is lost before they leave the building. They are upset or angry about something. If you handle it well then and there, they will come back. Customers do not switch service providers at the drop of a hat. The existing provider has a tremendous advantage by being a known quantity. There is both a psychic cost and an economic risk to learning about the alternative providers. If you can handle their complaints effectively, you have a very high probability of keeping them and enhancing their loyalty. You must implement damage control immediately once a complaint is heard.

Implement Damage Control

You have to give the customer an incentive for letting you know about a complaint. The service encounter contains many intangibles which are often matters of individual preference. The customer may not want to let you know what is wrong. Yet, you need to know. The customer who leaves knows far better than most what is wrong with your services, i.e., what can be fixed. For example, you may want to have forms available in your pharmacy for the customer to rate your service. Or you may want to offer a service guarantee of sufficient magnitude to make the unhappy customer

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

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want to communicate. Remember, however, when that customer does communicate, you must respond. Few things make people angrier than a complaint letter that goes unanswered. It just proves to them that you did not care in the first place.

The reported statistics on the profitability of old customers do not include the secondary effect of their word-of-mouth testimonials. Bad experiences with a service are talked about much more than positive experiences. Defecting customers are a loose cannon firing on your firm's reputation. Estimates are that a customer tells eight to ten people about a perceived wrong, but only four or five about a positive experience. Happy customers, however, are especially valuable for influencing potential new customers at the time a purchase is about to be made. I live in a town with a lot of turnover, including many retirees coming into town. They are often asking their neighbors, "Who do you use for — service?" Their neighbors are usually quick to tell them who they use and who not to use.

The process of responding to the bad and trying to make it up is called "service recovery." Heskett, Sasser and Hart reported on the keys to service recovery:[2]

1. Employees are selected by their ability to respond to the recovery opportunity.
2. Complaints are actively solicited.
3. Front-line employees are trained and promoted on how they handle recovery opportunities.
4. Responses to unfortunate situations are planned and employees are empowered to act.
5. Short lines of communication are fostered between management and the customers.
6. Management balances "doing it right the first time" and recovery after the inevitable slips.

Fix the Problem

Once you have mollified an unhappy customer, get to the root of why the problem occurred in the first place. There are three likely possibilities:

1. The firm's perception of what the customer wants is out of focus.
2. The system to produce the customer experience is poorly designed.
3. The accurately targeted and well-designed system is being implemented improperly.

Market research techniques can be used to find out whether or not your current customers' views of the service match what you had assumed or measured earlier. After you have heard them, heed what they say. The literature of services marketing is full of instances where the customer said what they wanted, but management then decided they were "atypical" or "irrational."

Monitor complaints as a basis for rechecking the design of your system. Are there unnecessary waits at unforeseen times? Are stocks in short supply? Are the design parameters used to design your system still realistic? In these dynamic times assumptions get out of date very rapidly. For example, a hospital I know set aside 12% of its operating rooms for outpatient surgery. At the time, 12% was the anticipated demand. Today, the outpatient surgery amounts to 60% of the procedures, but the dedicated operating rooms for inpatients stay at 12%. No wonder the outpatient surgery schedules are seldom met as the bulk of the outpatient surgeries are subject to setbacks by inpatient emergencies.

Good systems do not always get implemented effectively. I remember looking at a clinic scheduling situation where delays were serious despite an effective patient scheduling system. It turned out that the staff was taking patients on a first-come, first-serve basis, rather than first honoring the appointments. Frequent users observed this discrepancy and started coming earlier and earlier. Either patients had to be told they were to be seen first- come, first-serve or the discipline of the appointment book had to be upheld.

Remember, the tendency in health care is to blame the individual provider, when in fact, the contrary is true. The bulk of the problems in health care are system problems, not people problems. Yet, it seems much more natural for professionals to take names and penalize a provider than it is to question and then rethink their existing system.

Monitor Your Customers

Customer activity records should be monitored. Where there has been high activity and it stops, you should investigate. You may confirm that the customer moved away or died. You may also find a customer who left for another delivery system, such as an HMO, or that your prices were perceived as too high, or that you were perceived as rude by someone. You need to know which it was in order to change. Call up the defectors and ask why you haven't seen them lately. It would be easier with someone you met casually on the street on in church, but that won't happen often enough. You are going to have to make an effort to reach them.

A second approach which augments the former is to have a network of people who will tell you about any problems or negative statements when they hear of them. Of course, then you have to have the nerve to follow up with them. Friends and colleagues and other customers should be encouraged to keep you informed. It is your reputation. You have every legitimate reason to guard it.

Summary

Keeping your present customers is a lot cheaper than replacing them with new ones. Make every effort to find out who defected and why. If they are threatening to defect, take them seriously. If you do so, you are very likely to keep them and build their loyalty further. They are also a valuable source of information about what needs improving. When they have noticed something they think needs changing, they are very likely to be right. With their help you can find out what to change and have the profits to be able to make the change. Seek them out.

References

[1] Reichheld FF and Sasser WE. Zero defections: quality comes to services. *Harvard Business Review.* 1990; (Sept.-Oct.):105-111.

[2] Heskett JL, Sasser WE and Hart CWL. Service breakthroughs: changing the rules of the game. New York: The Free Press; 1990: 109-110. •

NCPhA ELECTION RESULTS

Report of the Elections Committee

The Elections Committee of the N.C. Pharmaceutical Association met today, March 5, 1991, at the Institute of Pharmacy in Chapel Hill to open and tally the mail ballots for NCPhA offices and the Pharmacy Foundation of N.C. Board of Directors. The results are:

For NCPhA President-Elect, 1991-92
Henry Smith, *Farmville*

For NCPhA Executive Committee (Three-Year Term, 1991-94)
Keith Elmore, *Wilmington*
Mickey Watts, *Concord*

(Two-Year Term, 1991-93)
Robert Worley, *Princeton*
Jimmy Jackson, *Garner*

(One-Year Term, 1991-92)
Steve Dedrick, *Durham*
Rob Bizzell, *Kinston*

For Board of Directors of the Pharmacy Foundation of N.C., Inc.
Pam Joyner, *Morrisville*
Bill Edmondson, *Durham*
Whit Moose, *Mt. Pleasant*
Teamie West, *Roseboro*

The above NCPhA officers, along with Betty Dennis, 1991-92 NCPhA President, will be installed at the 1991 Convention in Winston-Salem.

Each candidate can be proud to have been a candidate and to have received a substantial number of votes from his or her peers. Several of the races were extremely close.

The Elections Committee hereby declares the above listed persons as having been duly elected to be installed according to the Constitution & Bylaws of the organizations to which they belong.

Respectfully submitted, The Elections Committee: Mary Lynn Bell, (Chairman), Al Lockamy, Betty Dennis, A.H. Mebane, and Kathryn Jefferson. •

CORRESPONDENCE COURSE

PHARMACISTS' ROLE IN TREATMENT OF POISONING*

J. Douglas Bricker, Ph.D.
Assoc. Professor, Pharmacology-Toxicology
Duquesne University
Pittsburgh, PA

Thomas A. Gossel, R.Ph., Ph.D.
Professor, Pharmacology-Toxicology
Ohio Northern University
Ada, OH

Goals

The goals of this article are to discuss actions pharmacists can take when confronted by a patient who has been intoxicated with a systemic poison.

Educational Objectives:

Upon successful completion of this lesson, the pharmacist will be able to:

1. Outline the major steps recommended for treatment of ingested poisons;
2. Define the pharmacologic rationale and expected therapeutic outcome for each component of the treatment regimen;
3. State the recommended dose and method of administration for each component of the treatment regimen; and
4. Identify specific information that should be elicited from poisoning victims, and list other points that should be conveyed to them.

A poisoning victim, or parent of a suspected victim is standing in front of you, or is on the telephone. The advice you give may save a life, or prevent serious harm from the poison. How will you respond? What will you say?

One of the most important aspects of management of poisoning is knowing what to do, and in what order to do it! This article explains the fundamental principles of treatment routinely used in combatting acute poisoning by ingestion, including specific methods to reduce absorption of the toxic agent, or increase its elimination from the body. It restricts commentary to issues and measures that pharmacists can be expected to encounter in community practice.

Background

Statistics published by the National Clearinghouse for Poison Control Centers suggest that each year over 10,000 Americans die due to poisoning. There is no way to accurately estimate the exact incidence of all toxic ingestions. However, it is known that poisoning is the third leading cause of accidental deaths of children, preceded only by falls and fires. Most poisoning victims are children under 5 years of age. Many poisoned patients are treated by private physicians outside of an emergency setting, so no record is made known of the event. Data from the Clearinghouse show that only one in every 50 ingestions are ever reported.

It's convenient to think that most poisonings are due to exotic chemicals or agricultural/industrial solutions and solvents that are not readily available to the average consumer. Truth is, however, that the vast majority of all poisonings, fatal or otherwise, are actually caused by common substances found in the average household. The major causes of poisoning in the U.S. are listed in Table 1.

That the leading cause is plants should not be surprising in view of the current American pastime of cultivating many indoor and outdoor varieties of plants. Furthermore, many plants bear attractive fruit or berries that are enticing to inquisitive children. Actually, few people

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Table 1.
Major Causes of Poisoning in the United States

Plants
Soaps, detergents, cleaners
Antihistamines, cold medications
Perfume, cologne, toilet water
Vitamins, minerals
Aspirin
Household disinfectants, deodorizers
Miscellaneous analgesics
Insecticides (excluding mothballs)
Miscellaneous internal medications
Fingernail preparations
Miscellaneous external medications
Household bleach
Antiseptic medications
Psychopharmacologic agents
Cough medicines
Hormones
Glues, adhesives
Rodenticides
Internal antibiotics
Corrosive acids, alkalies
Paint

who cultivate plants understand the potentially toxic effects which may occur following their ingestion. Therefore, they fail to warn children of the danger, and take no precautionary measures to avoid the poisoning.

Pharmacists are frequently called upon to provide emergency treatment information in a wide variety of poisoning situations. It is true that before any action is taken, a physician or Poison Control Center should be contacted for advice. But poison victims or their parents are often stressed and panicked, and do not realize the formal protocol, or for whatever reason, they contact their usual supplier of drug information, the pharmacist. Of special note is that the poisoning victim's life can most often be saved, or serious damage prevented. In fact, the vast majority of poison ingestions can be managed at home.

Foremost among all other consideration when recommending treatment for acute poisonings is that the PATIENT is the priority. The familiar adage, "Treat the patient, then

Table 2.
Selected Characteristics of Poisoning

Sign or Symptom	May Be Caused By
Ataxia	Alcohol, barbiturates solvents
Breath odor	Alcohol: ethyl alcohol
	Garlic: arsenic, organophosphates, phosphorus
	Bitter almonds: cyanides
	Acetone: nail polish remover
	Violets: turpentine
	Wintergreen: methyl salicylate
Gastrointestinal	
Emesis (often bloody)	Boric acid, corrosives, heavy metals, phenol, salicylates
Abdominal colic	Arsenic heavy metals, mushrooms
Constipation	Lead, narcotics
Diarrhea	Arsenic, boric acid, iron, mushrooms, organophosphates
Heart rate	
Bradycardia	Digitalis, narcotics, sedatives
Tachycardia	Alcohol, amphetamines, atropine, salicylates, cocaine
Mouth	
Dry	Amphetamine, atropine, antihistamines, opiates
Salivation	Mushrooms, organophosphates, heavy metals, corrosives
Gum discoloration	Corrosives, heavy metals
Pupils	
Miosis	Mushrooms, narcotics, organophosphates
Mydriasis	Amphetamines, antihistamines, atropine, tricyclics
Respiration	
Rapid	Amphetamines, CNS stimulants, salicylates
Slow	CNS depressants
Skin	
Cyanosis	Nitrites, strychnine, CO
Red, flushed	Alcohol, CO, boric acid
Sweating	Amphetamines, barbiturates, cocaine, mushrooms, organophosphates

Table 3.
Representative Products That Are Usually Nontoxic When Ingested In Small Quantities

Abrasives	Elmer's Glue	Plaster(non-lead)
Adhesives	Etch-A-Sketch	Play-Doh
Antacids	Eye make-up	Porous-tip ink pens
Antibiotics	Fabric softeners	Putty
Baby product cosmetics	Glues and Pastes	Rouge
Ballpoint pen inks	Hydrogen peroxide (3%)	Rubber cement
Battery (conventional; if bitten)	Indelible markers	Shampoos
Bath oil	Ink	Shaving creams/lotions
Bleach	Laxatives	Soap and soap products
Body conditioners	Lipstick	Suntan preparations
Bubble bath soaps	Lubricants	Sweetening agents
Chalk	Lubricating oils	Teething rings
Cigarettes or cigars	Lysol	Thermometers (mercury)
Clay (modeling)	Magic markers	Toothpaste
Contraceptives, oral	Make-up (eye, liquid)	Water colors
Corticosteroids	Matches	Zinc oxide
Crayons	Newspaper wads	
Detergents	Paint, indoor latex	
Deodorants	Pencils	

the poison!" is universally true, and forms the basis for secondary actions. For example, it is of little value to apply heroic measures to remove an ingested poison from the victim's GI tract if the victim is not breathing. So the first step is to assess the patient's condition and take appropriate steps to stabilize the patient. However, most of the poisoning situations involving pharmacists will be of a less severe nature and the primary concern will be data gathering.

Imagine you have just received a call from a mother who suspects that her child has just ingested (a) a prescription medication, (b) plant, berries, or flowers, (c) a cleaning agent, or (d) some unknown substance. What questions should you ask the caller? Name, location, and telephone number are critical information. You may need this (1) if you have to call an emergency medical team to the scene, (2) become disconnected during your conversation, or (3) for follow-up calls to find out if the caller has taken your advice or if the condition of the patient has changed. Second, the name, age and weight of the victim will be valuable in determining the relative toxicity of the substance ingested, since most toxicity data are on a weight basis (mg/kg). Third, the name of the product or plant and the suspected amount that was ingested. Reading the label will give important information concerning the content, although sometimes this can be misleading. This is true for commercial products, as well as prescription medications. Estimating the amount or volume ingested can be helpful in assessing the degree of severity of the substance in question. A rule of thumb is that the volume of a swallow of a small child is approximately 5 mL, and for an adult, 15 mL. The next item would be the approximate time of ingestion. This is helpful when trying to assess whether signs and symptoms of the victim are consistent with the previously obtained information concerning the amount and type of substance ingested.

Some poisons can produce clinical characteristic which strongly suggest a particular poisonous substances (Table 2). For example, with cholinesterase-inhibiting insecticides, miosis, excessive salivation, and gastrointestinal hyperactivity will predominate. In tricyclic antidepressant overdose, mydriasis, loss of consciousness, absent bowel sounds, and cardiac arrhythmias will dominate the clinical picture. Many ingestions will involve nontoxic substances (Table 3) or at least nontoxic doses.

Gastrointestinal Decontamination

Once the poisoning victim is stabilized, attention should be directed to removing

Table 4.
Contraindications to induced emesis*

If poison was a:
- -Convulsant
- -Hydrocarbon
- -Corrosive

If patient:
- -Is unconscious or comatose
- -Does not have a gag reflex
- -Has severe cardiovascular disease or emphysema, or extremely weakened blood vessels
- -Is under 6 months of age

* Relative contraindications, in that a physician may determine that emesis is desirable.

unabsorbed poison from the GI tract. Severity of intoxication in most instances will be proportional to the length of time an unabsorbed poison remains in the body. The most effective means to accomplish gastric decontamination is dependent on many factors, especially the type of poison which was ingested. Several techniques will be reviewed.

Dilution. Dilution of the gastric contents is generally recommended, whenever ingestion of a poison is suspected, assuming the patient is conscious. Unless instructed otherwise, water is best, and the only liquid that should be used. The amount recommended is generally 1 to 2 cupfuls for a child, and 2 to 3 cupfuls for an adult. Fluids should never be forced. Offer the patient a quantity that can be comfortably swallowed. Excessive liquid may distend the stomach wall to cause premature evacuation into the small intestine. This can make it more difficult to remove the poison before it is absorbed.

For ingestion of solid dosage forms (e.g., tablets, capsules), dilution is not recommended universally. Added fluid may promote dissolution of the medication and actually increase the amount absorbed. Household products, especially cleaning agents, are suitably managed by dilution. A general rule in considering dilution of an ingested poison is that nothing should be administered orally to an unconscious patient, or if the gag-reflex is absent.

Water for dilution accomplishes two important functions. First, it helps reduce gastric irritation induced by many ingested poisons. Second, and more importantly, it adds bulk to the stomach that will assist in other decontamination methods. Tepid fluid may produce a more effective emesis than cold fluid.

Carbonated beverages should never be given. The release of carbon dioxide with resultant increase in pressure upon the gastric wall can induce perforation with caustics, enhance gastric emptying of the poison into the duodenum or reflux into the esophagus.

Milk is recommended occasionally as a diluent and/or demulcent. It may delay the onset of ipecac-induced emesis, however. In one investigation, 10 subjects received ipecac syrup with either water or milk. Given with water, the mean time to onset of emesis was 24 minutes; with milk it increased to 35 minutes. The difference was statistically significant.

Emesis. Emetics have been used in poisonings since earliest recorded history. Even ipecac has been in such use for several hundred years. Chemically-induced emesis with ipecac syrup generally is recommended as a first-line procedure for management of poisonings, because it can be easily administered at home and is safe and effective when used properly. Precautions and contraindications for emesis are listed in Table 4. If the victim is unconscious, there is danger that vomitus may be aspirated into the lungs and cause an inflammatory response. If the poison is a convulsant, forced emesis may precipitate seizures.

For petroleum or pine distillates, special care is needed when dealing with acute ingestions. Because of their low surface tension and viscosity, these substances can be aspirated readily into the lungs during emesis, and may cause chemical pneumonitis.

There is some controversy regarding use of

emetics in hydrocarbon ingestions. Unless directed by a physician, hydrocarbon poisonings should not be treated with an emetic.

If the ingested poison is a corrosive acid or alkali, emesis should be avoided, because it may incite further damage to the esophagus as the substance is brought back up. The tissue damage induced by these substances is related, in part, to contact time between poison and tissue.

Children under 6 months of age should not receive syrup of ipecac unless supervised by a physician. Their gag reflex is poorly developed and emetics may cause choking with aspiration. Emetics should be used with care in persons with severe cardiovascular disease, aneurysms, severe emphysema, or other conditions where blood vessels are weakened, because of the forceful type of vomiting that is produced with emetics.

Ipecac contains the active alkaloids emetine and cephaeline. These evoke emesis through both early and late phases of vomiting. Early vomiting is due to direct stimulant actions on the GI tract, and usually occurs within 30 minutes. A second action occurs after 30 minutes, resulting from direct stimulation at the chemoreceptor trigger zone (CTZ) which activates the vomiting center located in the reticular formation. This action produces coordinated somatic and visceral motor activity to elicit vomiting Therefore, if vomiting does not occur within the first 30 minutes, ipecac should not be quickly discounted as ineffective.

Recommended doses of ipecac syrup are shown in Table 5. A second dose may be given if the patient fails to vomit within 20-30 minutes. Success rate and onset of ipecac-induced emesis appears to be dose related. The overall success rate approaches 100 percent with an average time to emesis of 24 minutes. In a recent prospective study, 30 mL was more effective in inducing emesis than 15 mL in children. Moreover, the failure rate for 30 mL of ipecac syrup was only 0.5%, compared to 8.8% for 15 mL doses.

Ipecac can be administered at home by parents, after receiving proper instructions from a qualified health professional. Therefore, parents, guardians and others charged with responsibility for small children, should be strongly urged to keep ipecac syrup on hand at all times. Up to one ounce can be purchased without a prescription. Assuming that it may take approximately 20 to 30 minutes after administration for vomiting to begin, early administration is essential. Although emergency medical vehicles usually stock ipecac syrup, consider the following scenario. If it takes 10 minutes for the vehicle to reach a victim, plus another 20 to 30 minutes to initiate vomiting, serious damage from the poison may occur within this period. Worse, if treatment is not instituted until the victim arrives at the hospital, even more valuable time will be lost, and damage potentiated. The success of managing many poisonings at home is based on the fact that ipecac is used as early as possible, when indicated.

Table 5.
Recommended doses of ipecac syrup

Age	Quantity
6-12 months*	5-10 mL
1-12 years	15 mL
Adults	30 mL

*Forced emesis should be undertaken only by a physician

There is another advantage to giving ipecac at home, followed by a ride to a hospital or physician's office. The bumping about by a riding in a vehicle, and the physical discomfort afforded in a vehicle with the heater turned on high temperature, and windows closed, may help promote more rapid emesis.

One final reason to use ipecac syrup in poisonings is that drug-induced emesis generally is less traumatic to the patient than gastric lavage. Insertion of a lavage tube is unpleasant, especially to children. Lavage is slow, relatively inefficient, and may result in forcing material out of the stomach into the intestine where it cannot be easily recovered.

There has been concern raised that much of the home supply of ipecac syrup has passed its expiration date set by the manufacturer, and therefore, is not effective. Obviously, pharmacists should not promote the use of expired drugs, but if that is all there is, then it should be used. Studies have shown that even when ipecac syrup is several years beyond its expiration date, it maintains an emetic action. One report showed that four years later ipecac syrup retained full potency.

Soup solution is a suitable alternative to use when rapid emesis is indicated and syrup of ipecac is not available. Two to three tablespoonfuls of liquid dishwashing product should be mixed with 6 to 8 ounces of water. Soap solutions are believed to produce emesis by directly stimulating the gastrointestinal mucosa. Soap solutions are difficult to swallow, so this usually has poor acceptance.

Use of liquid dishwashing soaps and detergents should not be confused with laundry detergents, electric dishwasher granules, or hard-surface cleanser products. These are corrosive and may cause serious injury to gastric mucosa.

Mechanical stimulation of the back of the tongue of pharynx is often recommended as a means to evoke emesis. This procedure involves placing the victim across the lap in a "spanking position," and gently stroking the area with a blunt object, such as a spoon or tongue depressor. Fingers are not advised, since the victim may reflexly bite down as he is gagged, causing injury to the fingers.

The advantage of mechanical stimulation is its ready availability. The major disadvantage is its lack of effectiveness: gagging is NOT the same as vomiting. In a study of 30 children who were victims of poisoning, only two children actually vomited following the procedure, and the volume of emesis was insignificant (2 mL and 4 mL, respectively). All victims had previously received 6 to 8 ounces of fluid. Consequently, mechanical stimulation is NOT recommended as a means to induce vomiting.

Outmoded Emetics. Numerous substances have been advocated over the years as emetics. **Potassium and antimony tartrate** (tartar emetic), **copper sulfate**, and **zinc sulfate** were once used. Because of their erratic, slow emetic action and possible toxicity if absorbed, they are no longer recommended. **Mustard powder** mixed in water was once advocated and is still occasionally recommended. Mustard powder is unreliable as an emetic, and few households have it available. It also produced an extremely gritty, bitter taste. Valuable minutes therefore may be wasted in first, trying to locate it, and then trying to coax an unwilling child to ingest it. Consequently, mustard powder is no longer recommended as an emetic. Condiment (spice) mustard does not possess emetic value.

Salt solutions were also formerly recommended to induce emesis. They are now known to be potentially dangerous, and should never be used. When salt solution is administered and emesis does not occur, it is readily absorbed. As the blood sodium concentration rises, the tonicity of extracellular fluid increases. Intracellular fluid moves outward according to the laws of osmosis, resulting in shrinking (crenation) of cells. At the same time, intracranial pressure increased.

The first cells affected are those within the central nervous system. The crenated cells cannot perform their normal activities. The combination of damaged brain cells with disturbed metabolic functions, along with distension of intracranial blood vessels has led to severe intraventricular hemorrhage and the thrombosis throughout the brain. When this occurs, death is imminent.

Adsorbents. An alternate means to reduce absorption of an ingested poison is by use of an adsorbent. While several adsorbents, including kaolin, Fuller's earth, cholestyramine, pectin, and attapulgite are occasionally recommended, they are not universally effective. Activated charcoal is used routinely for adsorption of ingested poisons. The others are useful for selected poisons. Fuller's earth, for example, has a high adsorbent affinity for the herbicide paraquat.

Activated charcoal for treatment of poisoning can be traced back to the time of Hippocrates. Until recently, however, it did not receive high acceptance as an adsorbent. There were few definitive studies that demonstrated its absolute role in adsorbing poisons from the GI tract. Also, until recently it was common to mix activated charcoal with tannic acid and magnesium oxide to form the traditional "universal antidote." This mixture (1 part tannic acid, 1 part magnesium oxide, and 2 parts activated charcoal) was popularized years ago as a first-line remedy to treat poisoning by a variety of substances. Experimental evidence subsequently showed that it was neither universal nor an effective antidote, and should NOT be used. We now know that the activated charcoal component of "universal antidote" adsorbs part of the magnesium oxide and/or tannic acid. This reduces its overall

adsorptive property. Some studies have also shown that tannic acid can be hepatotoxic.

There are many other reasons why activated charcoal was shunned in toxicology until recently. Its physical characteristics make it undesirable to administer an effective dose to a poisoned patient. Additionally, in some cases it has been used indiscriminately, leading to negative reports of its adsorptive value. Many early studies with activated charcoal were conducted in animals or *in vitro* models, and few attempts were made until recently to correlate these findings with clinical efficacy. A large number of the clinical studies that were conducted were not particularly useful, since they analyzed extremely small doses of drugs or poisons that were far below those encountered in most actual poisoning situations. Other studies employed doses of activated charcoal that were too small to show beneficial action. The bottom line is that there were more reasons not to use it than reasons to do so.

Activated charcoal is a finely divided, black powder that is prepared by pyrolysis of organic material, such as wood pulp. It is insoluble in water. The activation process occurs when charcoal fragments are exposed to an oxidizing gas composed of steam or oxygen at high temperature (600-900°C). This results in an increased surface area of about 1,000 M^2 per gram for most charcoals. Experimental charcoals with a surface area of up to 3,500 M^2 per gram have been manufactured.

Burnt toast scrapings and crushed coal are unacceptable substitutes for activated charcoal. Commercial activated charcoal tablets and coal products intended for other purposes, such as water filtration units and fish tanks are ineffective also.

Activated charcoal reduces absorption of a wide variety of poisons, but has little or no effect on others (Table 6). In the GI tract, poisons diffuse through the numerous pores on the charcoal's surface and form tight chemical bonds, rendering the poisons unabsorbable. This charcoal-chemical complex, then, passes through the intestinal tract to be excreted. Effectiveness of charcoal adsorption is dependent on the quality of activated charcoal used, and time between ingestion and charcoal administration.

Activated charcoal is unsightly, and readily adsorbs substances from the air and water when mixed and allowed to stand. Therefore, it should be mixed immediately before use with sufficient water, preferably in a dark container to keep youngsters from viewing it! Several commercial products contain a premeasured quantity in an air-tight, opaque plastic bottle. Water is added to the powder at the time of use, and, following vigorous shaking, the mixture is administered directly from its container. Others are packaged with water already added.

Table 6.
Chemicals That Are Poorly Absorbed By Activated Charcoal

Alkali	Malathion
Boric acid	Mercury
DDT	Mineral acids
Electrolytes	N-methyl carbamate
Ferrous sulfate	Tolbutamide
Lithium salts	Water-insoluble compounds

Activated charcoal imparts a gritty sensation to the mouth, discolors the gums and mouth to some extent, and sticks to the throat. For these reasons, some people believe that children may refuse to accept it. However, controlled studies have shown that a business-like, no-nonsense attitude and direct approach meets with little resistance.

One means to increase the palatability of activated charcoal is to add flavoring and thickening agents. These include sodium alginate, carboxymethylcellulose, carrageenin, bentonite, gelatin, ice cream and sherbet, jams and jellies, cocoa powder, fruit syrups, saccharin sodium, and sorbitol. Sorbitol results in a product with a sweet taste which enhances patient compliance. Sorbitol also produces a cathartic action, which enhances transit time of the activated charcoal-complex through the intestinal tract. Caution is advised, however, before such substances are randomly added. Levy et.al. demonstrated that aspirin adsorption onto activated charcoal was reduced by nearly 25% when melted ice cream was mixed with the charcoal. Other studies have shown similar findings for this, and other additives.

The optimal dose of activated charcoal is unknown. The usual recommended dose is 50 to 100 grams for an adult and 15 to 20 grams for

Table 7.
Cathartics Used In Treatment Of Poisoning

Cathartic	Dose Child	Adult
Magnesium sulfate	250 mg/kg	5-10 gm
Magnesium citrate	4 mL/kg	300 mL
Sodium sulfate	250 mg/kg	15 gm
Sodium sulfate/sodium phosphate (Fleet Phospho-Soda)	20 mL	40 mL
Sorbitol	1.5 g/kg	1.5g/kg(50mL)

a child. Animal studies suggest that activated charcoal should be given in a dose ratio of at least 10:1, charcoal:drug. The quantity might be unrealistic for a child because of its large bulk. The important point to remember is that a sufficient amount must be given to be effective. Activated charcoal is pharmacologically inert and not absorbed systemically. Large doses cause occasional constipation, but may be used safely.

For maximal effectiveness, activated charcoal should be administered within 30 minutes of poison ingestion. When used to adsorb drugs that retard gastric emptying (e.g., sedatives, anticholinergics), beneficial results have been obtained when the adsorbent was given 6 to 8 hours after ingestion. Following aspirin ingestion a 10-hour interval between ingestion of drug and charcoal has still produced beneficial results.

Cathartics. When catharsis is indicated to remove toxic substances from the GI tract, a saline cathartic is desired. There have been few studies to evaluate their effectiveness. A rule of thumb is that, whenever contact time between poison and absorption sites is reduced, the potential for toxicity likewise will be lessened. Commonly used cathartics and recommended doses are listed in Table 7.

Catharsis should not be attempted when the poison is strongly corrosive, the patient's electrolytes are disturbed, or bowel sounds are absent. Aside from a few exceptions (i.e., castor oil for phenol intoxication, and mineral oil for fat-soluble vitamin overdoses) stimulant or lubricant cathartics should not be recommended. Additionally, magnesium-containing cathartics should not be given to persons with compromised renal function, because of the possibility of causing central nervous system depression; due to accumulation of high concentrations of magnesium in the serum. Sodium-containing cathartics are best avoided by persons with congestive heart failure or when fluid retention would pose significant danger. Use of a concentrated disodium phosphate enema has led to hypernatremia, hyperphosphatemia, and hypocalcemia. Metabolic disturbances are the most common consequences of acute cathartic use.

Demulcents. Occasionally, a demulcent is all that is needed to treat poisoning. Many plants and chemicals irritate the oral and gastric mucosa, without causing serious toxicity. Management of these acute ingestions may include the use of ice cream, milk, or other soothing agents to reduce gastrointestinal irritation.

Demulcents can also be beneficial, when treatment is not needed and it is obvious that the patient or parent believes something should be done. Thus, a demulcent frequently serves as an important placebo or palliative therapy.

Overview

When pharmacists encounter a frantic poisoning victim standing before them, or on the other end of the telephone, they can make a significant contribution to that patient's health by taking prompt action. They should keep in mind that panic may prevail in the victim, or victim's parent. Information surrounding the poison or poisoning circumstance may not be completely reliable. After calming the person and assessing the condition, pharmacists should attempt to identify what was taken, when and, if possible, how much was taken, and get information regarding the patient's age, weight and state of health. Also, remember that not all ingested substances are toxic. The patient's name and address should be obtained. Likewise a complete record of infor-

mation exchanged should be maintained to help defend against accusations that may be made later about mismanagement.

Pharmacists should then decide on which emergency measure to recommend, and assure that the victim has the required treatment available and knows how to use it. If appropriate, the individual should be counseled to transport the victim to an emergency medical facility as soon as possible or to call for transportation. It is appropriate for pharmacists to call the emergency ambulance, while the caller tends to the patient.

Before It Happens Again!!

Pharmacists can distribute stickers for placement on telephones that contain telephone numbers of the Regional Poison Control Center, local ambulance service, physician and pharmacy. Pharmacists should also recommend that all persons, especially parents of small children, keep an ounce of ipecac syrup and supply of activated charcoal available at home, at all times.

Parents should be urged to poison-proof their homes. At home, most poisonings occur in the kitchen, followed in order of frequency, by the bathroom, bedroom, and garage. It is not uncommon for a mother to report that her youngster got into some household cleaning agent found under the kitchen sink, or into a toilet cleaning aid or container of medicine from the drug cabinet in the bathroom, or a container of cosmetics on the nightstand in the bedroom. Likewise, reports are common that describe a child drinking liquid from a soda bottle found in the garage. The liquid was apparently believed to be a palatable beverage, but was actually gasoline, antifreeze, insecticide or paint thinner.

Parents should also be advised to teach their children about dangers from poisons. Children should learn to never place anything in their mouth unless it is specifically given them by a parent.. Pharmacists can obtain educational materials from their Regional Poison Control Center to distribute, and help teach these important concepts.

References (19) available upon request. •

CORRESPONDENCE COURSE QUIZ

Treatment of Poisoning

1. In general, which of the following classes of laxatives should be used when catharsis is indicated?
a. Stimulant
b. Saline
c. Lubricant
d. Bulk

2. Fuller's earth is recommended specifically as an adsorbent for poisoning by:
a. acetaminophen
b. salicylate
c. poinsettia
d. paraquat

3. For which of the following chemicals ingested in overdose is activated charcoal NOT recommended?
a. Ferrous sulfate
b. Aspirin
c. Phenobarbital
d. Tricyclics

4. The recommended single dose of ipecac syrup for a child 6 years old is:
a. 1 mL
b. 5 mL
c. 15 mL
d. 30 mL

5. Which of the following is reported to occur when salt solution fails to initiate emesis?
a. The victim may experience acute congestive heart failure.
b. The patient's blood pressure becomes elevated and aneurysm is common.
c. Cells within the central nervous system shrink and intracranial pressure increases.
d. Intraocular pressure becomes increased leading to onset of acute glaucoma.

6. The average adult dose of activated charcoal is closest to:
a. 1 gram
b. 30 grams
c. 100 grams
d. 250 grams

7. The goal of demulcent therapy is:
a. to chelate the poison with calcium which is present in most dairy products.
b. to induce emesis.
c. to hasten movement of the toxin through the GI tract.
d. to minimize abdominal discomfort by soothing and coating the GI tract.

8. The emetic of choice of those listed for home treatment of an ingested poisoning is:
a. copper sulfate
b. mustard powder
c. apomorphine
d. ipecac syrup

9. If an emetic is desired to be used concurrent with activated charcoal, the one of choice would be:
a. apomorphine
b. ipecac syrup
c. table salt
d. copper sulfate

10. Ipecac syrup may be dispensed without a prescription in quantities up to:
a. 0.5 ounce
b. 1 ounce
c. 2 ounces
d. 4 ounces

11. The poisonous substance responsible for the highest number of poisonings in young children in the U.S. is:
a. vitamin-mineral combinations
b. household bleach
c. caustic cleansers
d. plants

12. It is generally held that emesis should NOT be induced in poisonings with which of the following?
a. Gasoline
b. Barbiturates
c. Detergents
d. Aspirin

13. The most important point of the following for pharmacists to keep in mind, when receiving a telephone request concerning a poisoning, is:
a. the choice of a specific antidote.
b. the dose of ipecac syrup.
c. the dangers of activated charcoal.
d. the control of panic in the caller.

14. Water should be used to dilute a poison which has been ingested in order to:
a. distend the stomach wall.
b. delay transport of the drug into the intestines.
c. allow for the stomach contents to be vomited.
d. neutralize any acid swallowed.

15. Specific advice to convey to a consumer who asks about using ipecac syrup to treat an ingested poison that has exceeded its expiration date by 4 years is:
a. use it according to instructions on the label.
b. use it, but increase the dose by approximately 40%.
c. use it, and follow the dose within 5 minutes with activated charcoal.
d. do not use it since it contains a toxic degradation product.

16. The number of Americans who die each year from poisoning is believed to be closest to which of the following figures?
a. 1,000
b. 10,000
c. 50,000
d. 100,000

17. The odor of garlic on the breath suggests poisoning by:
a. ethyl alcohol
b. methyl alcohol
c. cyanide
d. arsenic

18. The volume of a swallow of a small child is closest to which of the following?
a. 1 mL
b. 5 mL
c. 15 mL
d. 20 mL

19. The site of ipecac syrup's emetic action is the:
a. gastric mucosa
b CTZ
c. both a & b
d. neither a nor b

20. The cathartic that is specifically indicated for phenol intoxication is:
a. magnesium citrate
b. sodium sulfate
c. mineral oil
d. castor oil

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(All provide 24-hour service)

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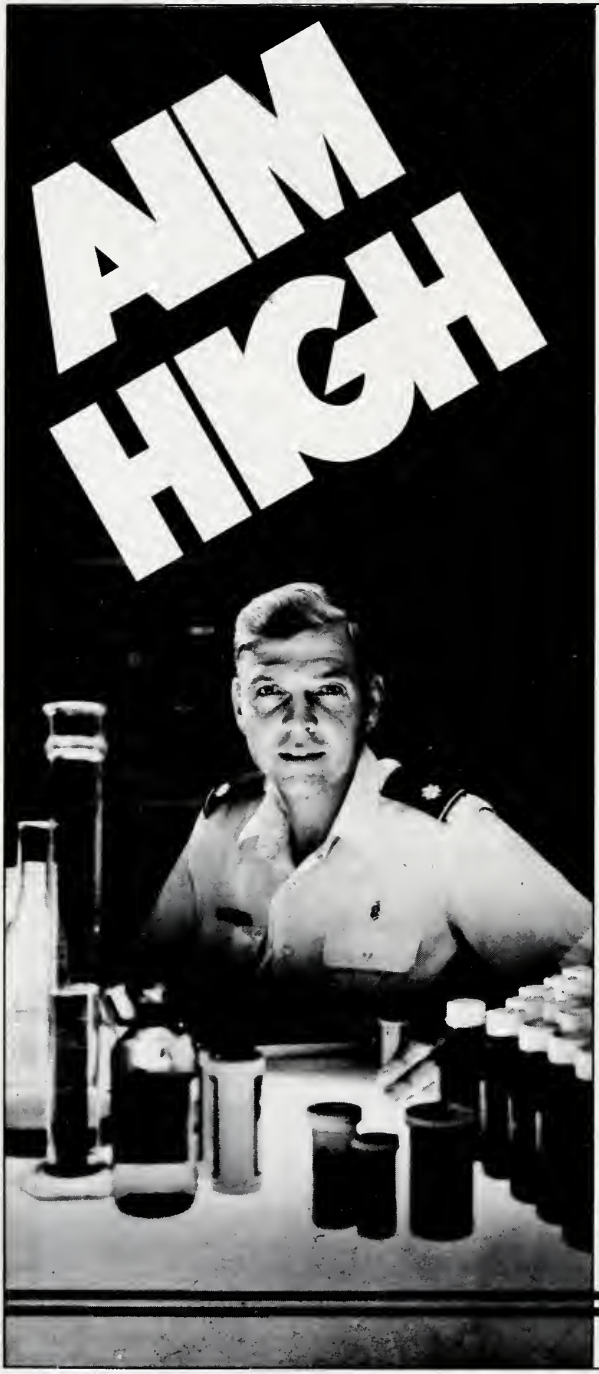
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1. a b c d	6. a b c d	11. a b c d	16. a b c d
2. a b c d	7. a b c d	12. a b c d	17. a b c d
3. a b c d	8. a b c d	13. a b c d	18. a b c d
4. a b c d	9. a b c d	14. a b c d	19. a b c d
5. a b c d	10. a b c d	15. a b c d	20. a b c d

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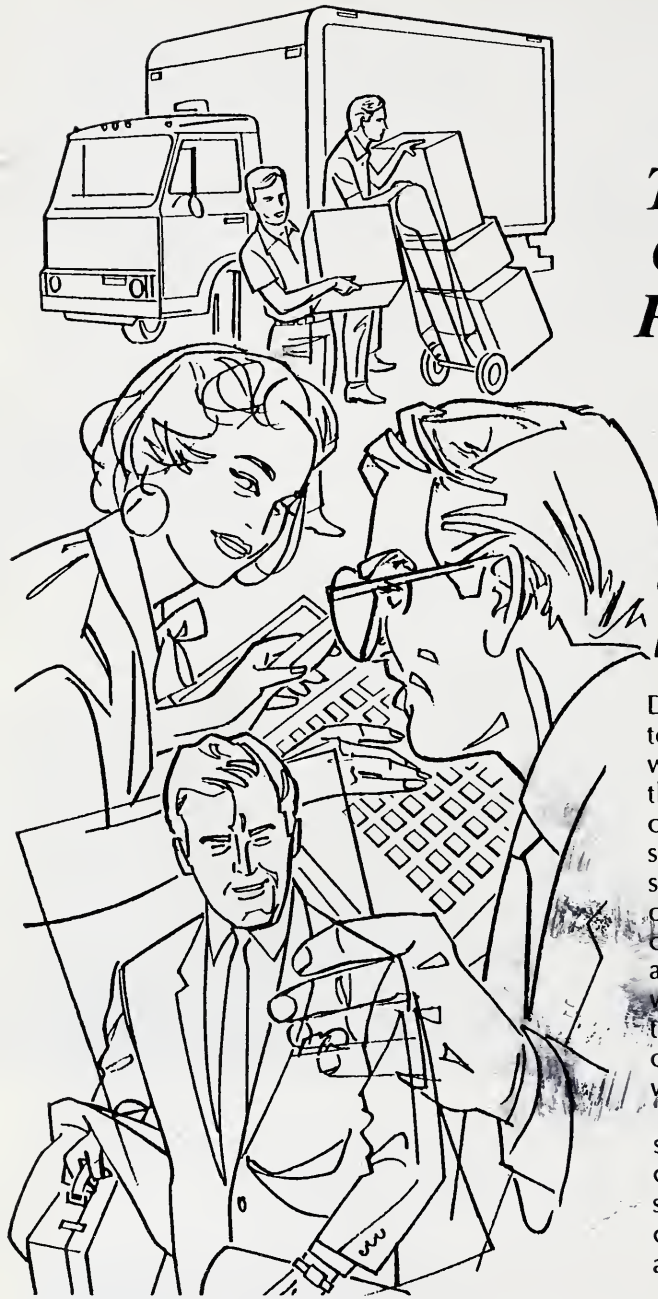
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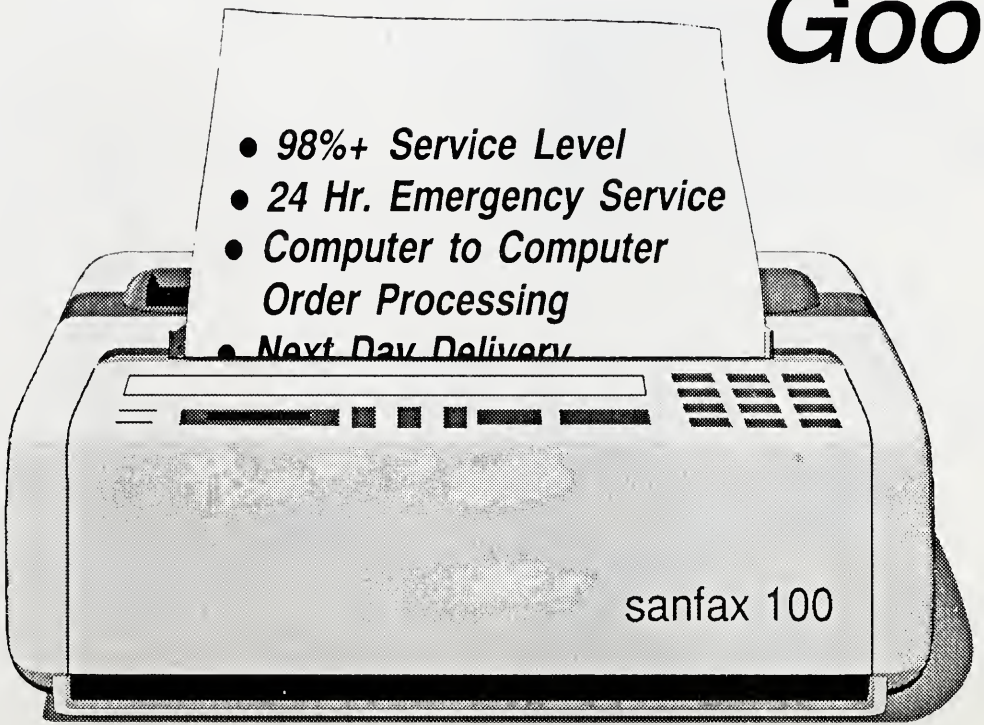
THE CAROLINA JOURNAL OF PHARMACY

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UNIVERSITY OF NORTH CAROLINA
APR 6 1991
HEALTH

Martha Wall
Winner of the 1991 National Patient Counseling Competition
Also pictured are Tom Miya, *left*, dean, UNC-CH School of Pharmacy and Al Mebane III, executive director, NCPhA

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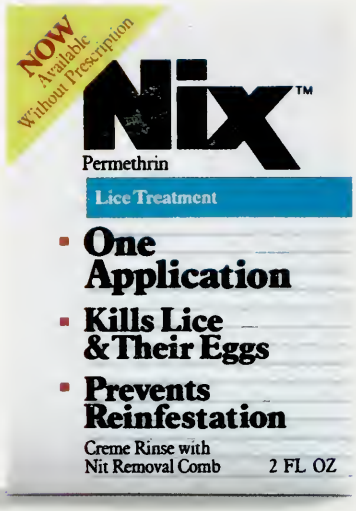


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NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

President
J. FRANK BURTON
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Vice Presidents
BETTY H. DENNIS
104 Calumet Court
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919•962•0030

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2025 St. Mary's Street
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HENRY L. SMITH
P.O. Box 147
Farmville, NC 27828
919•753•7111

Journal Staff

Editor
ALFRED H. MEBANE III

Managing Editor
KATHRYN K. JEFFERSON

Editorial Assistants
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TERRI M. LITTLE

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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THE PRESIDENT'S PAGE

J. Frank Burton
NCPhA President

"Building Pharmacy's Image"



I cannot remember the last time I attended a major state or national pharmacy meeting where the attendees were not reminded at one point or another about the Gallup poll finding pharmacists as the nation's most respected professional. Now, I am as proud of this result as any other member of our profession, but I think it is time we quit patting ourselves on the back so much about Gallup's flattering poll and get down to the business of examining what each of us is doing *individually* to build a positive image for pharmacy.

I recently read an article by a gentleman who is with a large public relations firm that specializes in the health care professions, and he made the statement that image building is done not simply through publicity, but through grass-roots activities and professional conduct. He went on to make the point that image is important because the right image can allow a profession to be heard, to have leverage with its various audiences, and to influence policy makers. A lack of image means that the decisions are debated and ultimately made without you. How many times in pharmacy have we seen this happen to our profession?!

Building a positive image can be a difficult task. It requires work, time, commitment, and planning beyond just doing a good job and waiting to be recognized for it. We must be active in our communities outside of the drug store. Volunteer to serve in activities that bring you into contact with your community leaders. Lend your expertise in health care to community efforts such as free clinics for the indigent or serving on boards or committees that tend to other community health care matters. I know that we pharmacists sometimes feel that we have little time away from the job as it is, but if we don't take the time to get involved in our communities, especially in its health care projects, how can we ever expect to project an image to governmental policy decision makers of pharmacists being a critically necessary player in the delivery of health care!

Why, for example, are pharmacists virtually absent now from discussions of health care issues in the media? If pharmacists want to play a larger role in the world of health care, we must build an image based on our contributions. We cannot depend on Mr. Gallup to get the job done for us. •

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PHARMACY LEADERS DISCUSS WIDE RANGE OF ISSUES AT ANNUAL FORUM

By Kathryn Kuhn Jefferson

For the seventh year in a row, pharmacy leaders gathered together at an invitational Pharmacy Leaders Forum sponsored by the North Carolina Board of Pharmacy (NCBP) on February 8-10, 1991, at the Mid Pines Resort in Southern Pines, N.C. This year's attendance roster included 38 participants from a variety of pharmacy practice settings—chain drug stores, hospitals, industry, schools, and associations. The purpose of the annual forum is to discuss issues of a common interest affecting the profession of pharmacy. William H. Randall, president of the NCBP, presided.

Forum Highlights

Task Force on Pharmacy

Highlights of the meeting included a report on the progress of the Task Force on Pharmacy from Chairman Ron Maddox. Established by the Forum in 1987, the charge of the task force is to educate the public, the health-care community, and community decision makers about the value of pharmacists' services. With assistance from the Burroughs Wellcome Company, the task force conducted a statewide public relations campaign to tout the valuable role pharmacists play. Twenty television stations received two videotapes—one encouraged the proper use of medications and the other conveyed an "ask your pharmacists about medications" theme. The task force group plans to promote the videotapes again during N.C. Pharmacy Week, October 19-26, 1991.

NCBP's Task Forces

Chairmen of the four NCBP's task forces—the Role of Supportive Personnel in Pharmacy, a New Definition of N.C. Pharmacy Practice, Standards of Practice, and Practice Competencies—also shared their progress reports with Forum participants. Interestingly, many of the same issues addressed by the NCBP task forces were also being addressed at the national level by the APhA House of Delegates during the 1991 Annual APhA Meeting, March 9-13, in New Orleans. Pharmacy practitioners in N.C. should be pleased their state pharmacy leaders are being proactive in addressing pertinent professional issues to help shape the future of their profession in N.C.

Task Force on the Role of Supportive Personnel in Pharmacy. Recognizing the expanded role of supportive personnel in pharmacy has allowed for expanded pharmacists' roles, the task force endorsed the 16 recommendations of the ASHP Technicians Task Force which support the development of a well-defined corps of technical personnel. Chairman Steve Dedrick reported there currently are seven formal technician training

Agenda
Pharmacy Leaders Forum
February 8-10, 1991

- NCBP Task Force Reports:
 - Pharmacy
 - Practice Competencies
 - The Role of Pharmacy Technicians
 - Definition of Pharmacy Practice
 - Standards of Practice
- Report of Pharmacy in the 21st Century–North Carolina Commission
- Report of CU School of Pharmacy
- Report of UNC School of Pharmacy
- Third School of Pharmacy in N.C.
- Legislative Priorities
- Pharmacist Recovery Network
- New Device Regulations
- Omnibus Budget Reconciliation Act of 1990
 - Demonstration Projects
 - Patient Counseling
 - Drug Utilization Review
- Young Pharmacist Involvement in the Pharmacy Profession
- New Model Pharmacy Practice Act
- NCPhA Videotape Presentation: "Counseling Low-Literate Patients"
- UNC School of Pharmacy Videotape Presentation: "Listen to Your Body Parts"
- Pharmacy Unity



Participants listen intently to the discussion at the 7th Annual Pharmacy Leaders Forum.

programs in N.C. All are designed to improve the competency of the pool of individuals from which pharmacy can draw to be technicians. In addition, Dedrick reported that one of the largest pharmacy technician groups in the country has organized in N.C. for the purpose of obtaining recognition. Future efforts of the task force will be directed towards developing a consensus about the role of technicians in pharmacy practice.

Task Force on a New NC Pharmacy Practice Definition. Chairman John Zatti submitted four drafts for a new N.C. Practice of Pharmacy Definition. As the practice of pharmacy continues to evolve and change over the years, so must the definition of pharmacy practice. The new definition incorporates the contemporary term, "pharmaceutical care," to describe the unique services pharmacists provide and the unique competencies pharmacists possess. Once a new definition has been finalized, the task force will recommend a statutory change in the N.C. Pharmacy Practice Act.

Task Force on Standards of Practice. Chairman Cindy Bishop reported her task force has reviewed: (1) existing standards of practice developed by APhA and ASHP, (2) consensor statements from the 21st Century Conference II, and (3) the state of technology in the pharmacy profession. Areas of pharmacy practice in which new or additional practice standards are needed, e.g., technology, will be recommended by the task force.

Task Force on Practice Competencies. Speaking for Tom Wiser, former task force chairman, Whit Moose described the task force's activities. Information has been collected on the five external Pharm.D. degree programs currently in operation around the country. (External Pharm.D. degree programs refers to nontraditional postbaccalaureate programs that offer Pharm.D. degrees to practitioners who fulfill degree requirements in ways other than full-time, on-campus study and clinical training.) Once all of the programs have been evaluated, the task force will decide whether or not to recommend a similar program in N.C. for interested pharmacists.

CU and UNC Schools of Pharmacy

Reports were also heard from the deans, faculty, and students of Campbell University and UNC Schools of Pharmacy. Currently, Campbell's ASP chapter ranks number one in the nation in terms of membership and student activities. At the UNC School of Pharmacy, fifty-one high school valedictorians are now enrolled. Both schools are evaluating applicants for admission at this time.

Third School of Pharmacy

Forum participants talked about recent discussions concerning a third school of pharmacy in N.C. David Work presented the number of pharmacists licensed with four-, five-, and six-year degrees. (Table 1.) A total of 6,568 pharmacists are licensed in N.C. George Cocolas presented data from the UNC Health Services Research Center regarding pharmacy manpower trends in N.C. (Figure 1.) The figure indicates a rapid decline in the N.C. popula-

Table 1
Pharmacists Licensed in N.C. by Degree Type

4-Year B.S. Degree	1,201	272
5-Year B.S. Degree	3,956	1,029
Pharm.D. Degree*	99	11
Total	5,256	1,312

**This figure includes 35 Pharm.D. graduates from the Campbell University School of Pharmacy's 1990 class.*

tion-to-pharmacist ratio after 1986 in contrast to the national ratio which has remained essentially the same since 1983. This was accomplished in part by the 55% growth in the supply of active pharmacists across the state compared to a national growth of 16.5% over the last decade. Cocolas pointed out that no other health profession in N.C. exceeded or equaled the nation in its per capita supply of health manpower; all other health professions in N.C. were below their respective national per capita ratios.

Chain store representatives commented on the low number of pharmacist positions currently available in their respective chains. Based on the data from the two presentations and comments from Forum participants, it was the consensus of the Forum that a third school of pharmacy is not needed at this time. Given the large start-up costs required to begin a new school of pharmacy and the present budget shortfall in the N.C. state government, another UNC pharmacy school seems unlikely.

1991 Legislative Priorities

Legislative priorities for the 1991 year were introduced by Virgil McBride, lobbyist for the NCPhA. "Freedom of Choice" legislation; a fee structure for licensure permits for medical devices; guarding against the spread of mail order pharmacy; protecting and improving Medicaid prescription reimbursement; preventing mandated multiple prescription forms for controlled substances; and legislation for physician, nurse, and physician assistant dispensing permits are at the top of the legislative agenda. Forum members acknowledged support for NCPhA's legislative efforts.

The Omnibus Budget Reconciliation Act of 1990, Medicaid's new prudent purchasing legislation passed by the 101st Congress, was also discussed. The legislation is deemed to have a significant impact on the profession of pharmacy as new guidelines regarding patient counseling and drug utilization review are included in the bill. Exactly how the bill's provisions will be fully implemented is yet to be determined by HCFA. NCPhA will be working with pharmacy leaders throughout the country to help guide HCFA with its plans for the bill's implementation. At the NCPhA 25th Annual Socio-Economic Aspects of Pharmacy Practice Seminar on March 21, 1991, in Greensboro, Al Mebane III, executive director, NCPhA, described how the bill will affect pharmacy in North Carolina.

N.C. Pharmacy Mission Statement

The Pharmacy in the 21st Century in N.C. (P21-NC) Commission, a multifactional, strategic planning group, has proposed a mission statement for pharmacy in N.C. Forum participants were asked to comment on the mis-

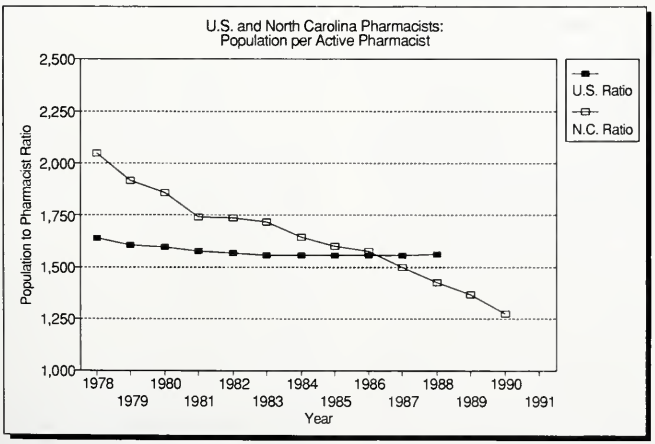


Figure 1. *Source:* **UNC Health Services Research Center. U.S. data was not available after 1988. The technical assistance of Lise K. Fondren, M.A., UNC Health Services Research Center, is gratefully acknowledged.**

sion statement presented by Bill Edmondson, chairman, P21-NC Commission. Comments have also been solicited from the NCPhA's and NCSHP's general membership via their respective publications. Both executive boards of the two organizations have endorsed the mission statement. Edmondson will present the new mission statement for pharmacy at the NCPhA 111th Annual Meeting, May 22-25, 1991, in Winston-Salem.

Pharmacy Recovery Network (PRN)

Tim Ives reported on the Pharmacy Recovery Network. Funding for the substance abuse treatment program continues to be a problem. Various ways to fund the PRN program were discussed by Forum participants. A new statewide organizational plan has been proposed by the PRN Task Force, while a search for a new executive director is in progress.

Attending the NCBP Pharmacy Leaders Forum were: NCBP—William H. Randall, Harold V. Day, Wm. Whitaker Moose, Jack G. Watts, William T. Biggers, Al Lockamy, David R. Work, William R. Adams; UNC—Tom Miya, George Cocolas, Wayne Pittman, June McDermott, Scott Ballenger (student); CU—Ron Maddox, Dan Teat, Fred Cox, Jerry Creech (student); NCPhA—Al Mebane, Frank Burton, Betty Dennis, Joey Edwards, Henry Smith, Kathryn Jefferson; NCSHP—Tim Poe, Cindy Bishop, Leslie Mackowiak; Chains—Jimmy Jackson (Kerr D.S.), Jim Krahulec (Rite Aid), Bob Myers (Eckerd D.S.); Wholesalers—Don Peterson (NC Mutual), Keith Elmore (Bellamy Drugs), Jim Meehan (Kendall Drugs), and Hope Wenke (Kendall Drugs); Manufacturers—Joe Whitehead (Burroughs Wellcome), Bill Edmondson (Glaxo), John Zatti (Glaxo); Others—Tim Ives (PRN). •

SEVEN N.C. PHARMACISTS IN THE SPOTLIGHT AT RECENT APhA ANNUAL MEETING

March 9-13, 1991 in New Orleans, LA

Stephen N. Caiola of Chapel Hill was appointed as a member of the APhA 1991 Reference Committee on Professional Affairs. Caiola is an associate professor and vice-chairman of the Division of Pharmacy Practice of the UNC-CH School of Pharmacy and director of the N.C. Pharmacy AHEC Program.

Bruce R. Canaday of Wilmington was installed as chairman-elect of the APhA's Clinical/Pharmacotherapeutic Practice Section of the Academy of Pharmacy Practice and Management (APPM). Canaday is a clinical associate professor of the UNC-CH Schools of Pharmacy and Medicine and director of education of the Wilmington Pharmacy AHEC Program.

Jan D. Hirsch of Durham was installed as a member-at-large on the APhA's Economic, Social and Administrative Sciences Section of the Academy of Pharmaceutical Research and Science. Hirsch is assistant director of pharmacoeconomics at Glaxo Inc.

Albert F. "Al" Lockamy Jr. of Raleigh was conferred the status of APPM fellow for his leadership and commitment to the advancement of pharmacy within the profession and his community. Also, he was installed as chairperson of the APPM Section on Community and Ambulatory Practice. Lockamy is a pharmacist-manager and the regional pharmacy affairs coordinator for Revco Drug Stores, Inc.

Alfred H. "Al" Mebane III of Chapel Hill was installed as president of the National Council of State Pharmaceutical Association Executives. Mebane is the executive director of the NCPhA.

M. Martha Wall of Winston-Salem was the 1991 winner of the APhA-USP National Patient Counseling Competition. Wall is a fourth-year pharmacy student at the UNC-CH School of Pharmacy.

Dennis M. Williams of Durham served as acting chairman of APhA's Clinical/Pharmacotherapeutic Practice Section of the APPM. Williams is a clinical associate professor of the UNC-CH School of Pharmacy. •

BOOK REVIEWS

Pharmacy - An Illustrated History
By David L. Cowen and William H. Helfand
Published by Harry N. Abrams, Inc., 100 Fifth Ave., New York, NY 10011, 1990.
272 pp., 10-1/2" x 13" hardbound.
Price: $75.00 retail; $60.00 (*available through NCPhA*).

Pharmacy - An Illustrated History is a book you will not only want to display because it is beautiful, but also will want to read because it is fascinating.

Pharmacy is the oldest of the healing arts and this comprehensive volume records its intriguing history from the most primitive "oral rite" chants and sounds of the shaman to today's and tomorrow's high tech, dynamic force in health care delivery. It defines and discusses pharmacy as a health profession, on three different levels.

The first deals with "the procurement, preservation, preparation, compounding and dispensing of drugs in appropriate dosage forms." At this level, these activities form the institutional, legal and ethical foundations on which pharmacists perform their functions in service to society.

The second level of definition is that of *materia pharmaceutica.* This aspect concerns the accumulated knowledge of drugs and medicines, the scientific component of pharmacy, which today includes the sciences of pharmacology and pharmocognosy, as well as the relatively new subsciences of pharmacokinetics and pharmacodynamics.

Pharmacy as an experimental science comprises the third level, a creative one which seeks to improve and develop medications. In this role, pharmacy operates within the laboratories of universities, governmental agencies and the pharmaceutical industry.

Included in this most interesting work are chapters on the classical world, the middle ages, the Renaissance and others on through history to modern science, technology and the role of industry. The chapter on the twentieth century pharmacist deals with modern topics including the development of hospital and clinical practice, and the emergence of women in the profession.

An integral part of the book are some 300 illustrations, over 150 of them in full color. Interspersed throughout the text, the illustrations graphically portray the arts and artifacts, the lore and literature, the people and places, and the times and triumphs of pharmacy. They add immeasurably to the quality of this large and very handsome volume.

The authors are highly respected and acknowledged experts in their fields. David L. Cowen, Professor Emeritus of History at Rutgers, The State University of New Jersey, has served both as chairman of the department of History at University College of Rutgers, and lecturer in the history of pharmacy at the Rutgers College of Pharmacy. He is the author of numerous articles, books and monographs on this history of pharmacy and is the recipient of many American and international awards. William L. Helfand, a recently retired pharmaceutical executive, with several honorary degrees, has also written extensively on the history of pharmacy. Together, they have created a dynamic, compelling pictorial history of pharmacy, wonderful to own, to give, to enjoy.

Professor Cowen, in addition to other works, authored a paper pamphlet on the occasion of the 75th Anniversary of the founding of the New Jersey Pharmaceutical Association, a bicentennial series on "Pharmacy in the American Colonies" published in 1976 in the *New Jersey Journal of Pharmacy*, later circulated as a booklet, and also authored a centennial history of the New Jersey Pharmaceutical Association entitled "The New Jersey Pharmaceutical Association 1870-1970."

Pharmacy – An Illustrated History is avail-

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Diana S. Herman
Assistant Director of Member Services, NJPhA

Another Time
By Phil Link
Published by Carolina Cerulean Books, P.O. Box 13674, Greensboro, NC 27415-3674, 1990.
208 pp., 6" x 9" paperback.
Price: $9.95.

Another Time, subtitled, "A Fictional Story of the Truth About Fraternities at Chapel Hill in the 30's," is written by pharmacist-author, Phil Link of Reidsville.

When two boys, Denny Goins and Scott Rhine, from the same small town enter The University of North Carolina at Chapel Hill (UNC) in 1934, the stage is set for a revealing look behind the fraternity facade.

Young Scott Rhine's interest in the four-year course of study leading to a Bachelor of Science degree in Pharmacy and a mention of pharmacist–physician relations in the 30's will arouse pharmacists' interest in the story.

The author first attempted to publish the novel in 1961, but was unsuccessful. Since then, the story has undergone extensive literary surgery in six subsequent revisions, resulting in the present version which has been described as old-fashioned storytelling at its best. Although the book is not autobiographical, the author drew upon his experience as a member of two fraternities at his alma mater, UNC-CH, to create the story. Link was a member of the social fraternity, Phi Kappa Sigma, and the pharmacy honor fraternity, Rho Chi.

At the beginning of the book, the author explains, "the earthy and sometimes bawdy language found in parts of the book was used not to shock, but to create credible characters, such as the fraternity boys, 'who really did talk that way.'" Phil Link views his novel as a sermon in disguise and is certain his mother would have enjoyed reading it, once she got past being bothered by the coarseness of the language and certain situations integral to the plot.

In an affectionate tribute to his family, Link dedicated the book to his wife, Peggy, an accomplished artist; to his two children—Janet, a gifted writer and photographer, and Phil, an artist and art teacher; and to his brother, Buck, a "teller of tales," who died last summer.

Phil Link was born in 1915 in Reidsville, NC, where he practiced pharmacy for over 40 years. He is a graduate of the UNC-CH School of Pharmacy and was active in the North Carolina Pharmaceutical Association until after his retirement in 1983.

Autographed copies of *Another Time* can be purchased for $12.45 ($9.95 plus $0.50 tax and $2.00 shipping fees) via check or money order from: Carolina Cerulean Books, P.O. Box 13674, Greensboro, NC 27415-3674.

Kathryn Kuhn Jefferson
Director of Professional Affairs, NCPhA

CALL FOR VOLUNTEERS! N.C. PHARMACY WEEK COMMITTEE

Volunteers are needed to assist Rebecca Wheeler, chairman of the NCPhA N.C. Pharmacy Week Committee, with planning and coordinating the 1991 N.C. Pharmacy Week, October 19-26. Pharmacists are especially needed from the following cities: Charlotte, Fayetteville, Wilmington, and Greensboro.

Plans are already underway for a bigger and better than ever N.C. Pharmacy Week. The first joint NCPhA-NCSHP Pharmacy Week Committee meeting is scheduled for Thursday, April 25, from 1:00 p.m. to 3:00 p.m. at the N.C. Baptist Hospital in Winston-Salem.

If you are interested in becoming a NCPhA N.C. Pharmacy Week Committee member, contact Al or Kathryn at 1-800-852-7343.

BIG BROTHER / BIG SISTER
CAREER DEVELOPMENT PROGRAM

Due to the ever-increasing job possibilities for pharmacists, the Employer/Employee Relations Committee of the North Carolina Pharmaceutical Association feels a significant need for role models in our profession. This realization led to the development of the BIG BROTHER/BIG SISTER CAREER DEVELOPMENT PROGRAM. To become a BIG BROTHER/BIG SISTER role model, simply complete the questionnaire below. The questionnaires will then be categorized and filed by practice area; they will be available for review at the Institute of Pharmacy in Chapel Hill. The program is designed to provide pharmacists and students with information regarding various career options. We need YOUR support to make this program a success!

1. I would be willing to advise pharmacists/students with regard to: (Check all that apply.)

_____ my career field

_____ my employer

_____ referring pharmacists/students to the appropriate person within my organization for an employment interview

_____ internship opportunities organization

2. NAME: _____ Degree(s) _____ Employer _____

3. I WOULD PREFER TO BE CONTACTED AT: () HOME; () WORK

4. I WOULD PREFER TO BE CONTACTED BY: () MAIL; () PHONE

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PLEASE INDICATE THE AREA IN WHICH YOU PRACTICE:

RETAIL CHAIN

❒ (1) Staff
❒ (2) Management

RETAIL INDEPENDENT

❒ (3) Staff
❒ (4) Management
❒ (5) Owner

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❒ (6) Staff
❒ (7) Clinical
❒ (8) Management

INDUSTRY

❒ (9) Manufacturing
❒ (10) Research and Development
❒ (11) Sales and Marketing

AMBULATORY CARE

❒ (12) Staff
❒ (13) Management

LONG-TERM CARE

❒ (14) Staff
❒ (15) Management

ACADEMIA

❒ (16)

GOVERNMENT

❒ (17) State
❒ (18) Federal

OTHER

❒ (19) (title) _____

THANK YOU FOR YOUR PARTICIPATION.

INTRODUCING THE BIG BROTHER/BIG SISTER CAREER DEVELOPMENT PROGRAM

A new program is being implemented by the Employer/Employee Relations Committee of NCPhA to assist pharmacists with career development and/or guidance. The BIG BROTHER/BIG SISTER CAREER DEVELOPMENT PROGRAM is your opportunity to become a role model for other pharmacists and pharmacy students.

The April mailing of the *NC Board of Pharmacy Newsletter*, will include a form (see sample form on the previous page) which you can use to volunteer to be a "Big Brother/Big Sister." The form will ask for pertinent information regarding your career. It will also ask you to indicate what areas of your career you would be willing to discuss with other pharmacists or students. To become involved, simply complete the form and return to NCPhA by May 31, 1991.

All returned forms will be filed by practice area and will be available for review by pharmacists and pharmacy students at the Institute of Pharmacy in Chapel Hill. Pharmacists and students interested in your career field, employer, education, etc., will contact you directly. The time commitment is at your discretion.

Don't miss this opportunity to lend a helping hand to your fellow pharmacists. We need YOUR support to make this program a success!

Employer/Employee Relations Committee: John Mackowiak (chairman), Kevin Almond, Wayne Avery, Sandra Bettenhausen, Don Blakenship, C.D. Blanton, Brent Clevenger, LaRue Dedrick, Lisa Grimes, Barbara Johnson, Mary Ann Largen, George Malpass, Patsy Myers, Grace Ponzer, Bob Schollard, David Schultz, and Vince Stevens. •

PHARMACY CALENDAR 1991

May 12	UNC-CH School of Pharmacy Graduation
May 13	Campbell University School of Pharmacy Graduation
May 19-22	NARD Expo, Reno, NV
May 20	NC Board of Pharmacy Reciprocity Hearing
May 21	NC Board of Pharmacy Meeting, Board of Pharmacy
May 22-25	**NCPhA 111th Annual Convention, *Decade of Decisions*, Winston-Salem**
June 2-6	ASHP Annual Meeting, San Diego, CA
June 18	NC Board of Pharmacy Meeting, Board of Pharmacy
June 24-25	NC Board of Pharmacy Licensure Exam, Holiday Inn Four Seasons, Greensboro
July 15	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
July 16	NC Board of Pharmacy Meeting, Board of Pharmacy
August 20	NC Board of Pharmacy Meeting, Board of Pharmacy
August 29	Campbell University School of Pharmacy Fall Convocation
Sept. 14-15	**6th Annual NCPhA/UNC-CH School of Pharmacy Pharmacy Practice Seminar, Wilmington**
Sept. 16	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Sept. 17	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 2-3	NCSHP Fall Seminar, Greensboro
Oct. 15	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 19-26	**NC Pharmacy Week/National Pharmacy Week**
Oct. 27-31	NARD Annual Meeting, Baltimore, MD

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INSURANCE / FINANCIAL SERVICES

KNOWING THE CUSTOMER

Do you know what patients expect from their pharmacist?

This is the fifteenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Customers want what they expect. This may or may not be what you believe they should be getting. Professionals find this customer point-of-view particularly hard to accept. It isn't associated with double-blind studies, patient needs, or marketing plans. Customers also expect what they want. So marketing effectively to customers comes down to managing and meeting their expectations.

What is new in health care is that patients expect to be treated as customers, not just as patients, clients, or "that crock in Room 1107." There are many pros and cons to the arguments about how much health care should be managed strictly as a business. As hospitals have become transformed from charities into businesses, one side effect has been the users' heightened expectation that they should be treated as customers by all parts of the system.[1]

Treating patients as customers is something that does not come easily to health professionals. Two suggested reasons for resisting this role are:

> "first, the medical practitioner, whether physician, nurse or technician, views the sick person as one who is to be treated and healed, not as one who is paying a lot of money for medical services; and second, they resist viewing patients as customers because of some belief that doing so cheapens the practice of medicine and reduces it to a level that is undignified and unprofessional." [2]

The term "undignified" may also be a cover for issues of control in the customer-practitioner relationship. A customer is an equal. Policy may even dictate that "the customer is always right." That is hard for medical practitioners to swallow when they have superior technical knowledge and a professional code that requires acting as an agent for the customer's interests in their area of expertise.

Defining the Customer

We all know the customer is not always right. The important thing to remember is that the customer is the most important person in the business, right or wrong. The customer does not interrupt our work. The customer is the reason for it in the first place. The customer is a fellow human being with needs and concerns and deserves our attention and respect.

The customer is an individual, but for analytical purposes must be grouped into segments, strata of customers and potential customers who require the same service characteristics. One has to design a service

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

with an idea of the segments available and those for which one chooses to compete. Usually customers are defined by the demographics—male vs. female, age groups, income groups, etc. This type of market information is relatively available. Your records may give you a good profile of your customers and the Census data provide a good profile of the universe of available customers. You know the demographics of a particular neighborhood and of a specific pharmacy. That is helpful, but it doesn't tell you much about why groups of people make the purchase decisions they do or how to serve them best. The data on how groups of people think is called "psychographics" and is very important in services marketing.

Psychographics

Knowing not just who buys our products, but also why and how, can lead to much better marketing to any market segment. Valarie Zeithaml of Duke's Fuqua School has advanced a number of hypotheses about service buying behavior. They include: 1) greater perceived customer risk in buying services than goods, 2) greater use of customer's personal information sources before purchasing, and 3) use of facilities and price as the customer's cue for quality. Therefore, more extensive post-purchase evaluation and information search should be undertaken by the server.[3] Albrecht and Bradford note that the baby boom customers are more interested in a personal relationship with the server and in being served rather than being sold like the group that preceded them. [2] All of these observations point to how groups of customers are best served face-to-face.

Moments of Truth

Jan Carlzon, CEO of Scandinavian Airlines System (SAS) suggests that each face-to-face encounter involves one or more "moments of truth" in which the employees prove to the customer that he or she should continue to use their service.[4] These moments of truth set the tone of the service relationship and are the product of the customer's mind-set interacting with the server's mind-set. Some very powerful moments of truth occur when the customer:

1) Decides whether or not to buy the service.
2) Decides whether or not the service is worth the money spent.
3) Decides whether or not to come back for more.
4) Decides whether or not to refer someone else to a service.
5) Decides how to accept bad news when it is given.

The last is often given a good news/bad news slant by the deliverer.[4] For example, a year ago I was coming back from a conference in Africa and I had to fly to Raleigh-Durham from Paris. I knew that it was snowing in the Triangle from a call home. When we were over Labrador, the American pilot came on saying, "I have some good news and some bad news. The good news is that we are getting in an hour earlier. The bad news is that it is the Kennedy, not the Raleigh-Durham airport." Many more moments of truth came rapidly as we were housed overnight and sent home the next morning on an Eastern flight.

Pharmacists' Moments of Truth

Your task is to identify the moments of truth that occur in the pharmacy in which you work. Probably all five of the types cited above apply to your setting. Another occurs when the customer decides whether or not to comply with the instructions you provide. They occur when you ask a question of a customer in the open or privately. Others may be associated with billing and insurance procedures, especially for older patients.

Pharmacy interactions may involve moments of truth for others, too, not just the patient. There are moments of truth for the physician who may often recommend a particular pharmacy to the patient. They occur in terms of how phoned orders are handled and if and when the pharmacist observes and calls back physicians about potential drug interactions. They occur in decisions about whether or not to use generics when the choice is open. In a relationship as complex as the prescribing, filling and administration of drugs, there are many potential moments of truth.

Continued on page 20

DICKINSON'S PHARMACY

"...Bob Matesic is able to [be a 'non-participating pharmacy'] because he has a successful, high-touch pharmacy business..."

The "non-participating pharmacy." Every pharmacy's pricing and billing practices are supposed to be the free and independent product of each owner's unassisted policymaking; the law requires it.

Yet, increasingly, many pharmacies seem to "go with the flow" of what the market appears to have established, without giving specific situations much independent thought.

What happens if, in a particular case, a pharmacist decides not to "go with the flow," but to instead become a "non-participating pharmacy"?

A minority of such pharmacists have done this, deciding that signing Plan X's "participating provider agreement" would amount to an assignment of the pharmacy's right to full payment, in exchange for the doubtful "privilege" of fixed-fee, AWP-minus reimbursement.

One such pharmacist, Etna (PA) independent Bob Matesic says he has found that the better way to go is to help his regular patients (with whom he has obviously established a mutual trust) submit their own claim to the carrier for his usual and customary charge.

Then he collects from the patient when they are reimbursed. All major plans accept such direct-pay patient claims

Non-participating pharmacies such as Matesic's may therefore raise their average reimbursement per Rx by escaping participation contracts that bind them to AWP-minus and fixed-fee formulas.

To avoid revealing Matesic's actual numbers, I will hypothesize a theoretical case to show how his idea might work in practice.

Say a pharmacy buys a 100-tablet bottle of Maxzide-25 showing an AWP of $30.03; a 30-tablet fill from that bottle would round out to $9 ingredient cost to the program plus (say) the program's fixed $2.75 fee for a reimbursement of $11.75, which does not reflect the pharmacy's administrative costs of billing and being audited from time to time.

Under Matesic's alternative, that same quantity of Maxzide-25 might be billed to the patient at (say) $31.56; the plan pays 80% of the actual charge to the patient and deducts an additional $5 copay; when paid by the plan, the patient then pays the pharmacy $20.25 (i.e., 80% of $31.56 equals $25.25, minus $5 copay) — which is almost 72% more than the pharmacy would have received if it had been a "participating pharmacy."

When we put Matesic's idea to Bob Johnson, CEO of PCS, he was skeptical that most pharmacists would want to trust their patients that far, but he acknowledged that Matesic seemed to have "found a way around the system."

Matesic bridled at that expression — it implied under-handedness, when "to the contrary, I think I've found out how 'the system' worked right from the start!" Johnson said that 4% of PCS's claims come from non-participating pharmacies that could be doing just what Matesic is doing.

Of 1,100 pharmacies dispensing for third-party beneficiaries in Western Pennsylvania, Matesic told us his is one of only three that deal this way.

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy—The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

Johnson predicted that if a substantial number of stores began operating as non-participating pharmacies, it would send plan sponsors' costs up, and they would respond by imposing higher copays and deductibles.

The cost of processing paper claims from patients is "significantly higher" than electronic claims, Johnson said; PCS charges plans $2-$2.50 per paper claim, compared with 75-90 cents per claim processed by ReCap.

He saw no prospect of processing patient-reimbursement claims through a pharmacy terminal and ReCap to reduce paper claim costs.

Matesic sees the pharmacist's "personal touch" with the individual patient as the key to his success; being a non-participating pharmacy would not work without it.

In his case, the patient fills in the claim paperwork in his pharmacy, and he mails it to the plan for the patient. The patient picks up his or her medication without payment, and Matesic waits as long as it takes for the patient to pay. Trust is obviously the linchpin of the whole arrangement.

On a brief visit to his pharmacy, we could easily see why. We saw Matesic spend five minutes talking an asthmatic patient out of buying a $6 OTC antihistamine. "You should try a saline gargle each night and cracking your bedroom window to provide some fresh air circulation instead," Matesic advised. The patient took a bit of convincing but left empty-handed and apparently happy. Somebody has to pay for that kind of patient care in any neighborhood, or the people have to go without. Matesic is able to do this because he has a successful, high-touch pharmacy business. And it's not as if he has no competition; within a three-mile radius, he has two Giant Eagle supermarket pharmacies, three Thrift Drug chain pharmacies, one Medicine Shoppe and four independents.

Matesic would not reveal his client base, other than to say "it's over 100 and less than 500." He accepts no welfare prescriptions, but will fill "pro bono" in an emergency. He also stocks no generics, and thus advertises that his pharmacy is "exempt from Pa. generic drug law." Matesic asserts that only once has a patient's claim been adjusted down by a carrier; on that occasion, the third party plan paid AWP plus 50%, with no fee. •

KNOWING THE CUSTOMER

Continued from page 18

Send Us Your Moments of Truth

Since you are working pharmacists, you should be able to add to the list better than I. Think about it. What are the moments of truth for you in your interactions with customers and providers? Can you add to the list? If so, send your examples to: NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

If enough of you send them in, I will feed them back to you in a future article.

Moments of truth also exist between the front-line employee and management. The earlier article on "internal marketing" discussed the importance of this relationship at length.[5] What are the moments of truth for you with your bosses as they sell you on playing out the roles they want delivered? If you send us some of the moments of truth with customers and providers, don't hesitate to add some relating to bosses.

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[3]Zeithamal VA. How consumer evaluation processes differ between goods and services. In: Donnelly JH and George WR, eds. Marketing of services. Chicago: Amer. Marketing Assoc.; 1981:186-189.

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[5]McLaughlin CP. Selling your own people: internal marketing. *The Carolina Journal of Pharmacy*. 1991; 71(Jan):35-37. •

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CORRESPONDENCE COURSE

NEW DRUGS, PART II: CENTRAL NERVOUS SYSTEM AGENTS



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to identify and discuss new drugs approved by FDA and/or marketed during late 1989 and 1990.

Objectives

At the conclusion of this lesson, successful participants should be able to:

1. exhibit knowledge of the drugs discussed by pharmacologic and therapeutic classification;
2. choose the indications, mechanism of action, benefits and limitations of the drugs discussed;
3. identify adverse effects and drug interactions associated with the drugs; and
4. demonstrate an ability to counsel patients on these new drugs.

An average of 21.7 new molecular entity drugs were approved each year throughout the 1980s. Drugs that were approved and/or marketed since late 1989, and are active on the central nervous system, are discussed in this article. The number-letter designation that follows first mention of the generic name is FDA's classification, assigned at the time the manufacturer requested a New Drug Application. All drugs in this article are "1" (new chemical entities). The letters include: A (significant therapeutic gain), B (modest therapeutic gain), and C (little or no therapeutic gain), when compared to previously available therapy for the same indication.

Antiparkinson Drugs

Pergolide (1B; Permax). Pergolide, like bromocriptine (Parlodel), is an agonist for dopamine receptors in the central nervous system, most specifically, the extrapyramidal system. It is especially beneficial as adjunctive therapy in advanced Parkinson's disease when response to levodopa is deteriorating.

Parkinsonism refers to a number of neurological disorders that affect a person's ability to properly control muscular movement. It is a collection of disorders that range from akinesia (abnormal absence of movements) to dyskinesia (impairment of the power of muscle movement; sometimes referred to as shaking palsy).

The pathologic problem is believed to be an imbalance of neurotransmitters, primarily dopamine and acetylcholine, that control nerve impulses in the extrapyramidal system, the

area in the brainstem that coordinates muscular motor movement. The basic problem for many patients is that they do not produce sufficient dopamine in that area.

The treatment of choice for Parkinsonism is levodopa, given as the combination levodopa/carbidopa (Sinemet). Dopamine itself cannot be used because it does not cross the blood brain barrier from peripheral circulation to the brainstem where it is needed to correct the problem.

Levodopa, which does cross, is the immediate metabolic precursor to dopamine. It is metabolized into dopamine by the enzyme dopa decarboxylase. This can occur in the periphery to excessive degree leading to irritating and uncomfortable side effects and inadequate therapeutic action.

Carbidopa is a dopa decarboxylase inhibitor, and prevents peripheral conversion of levodopa to dopamine, increasing the amount available for transport into the central nervous system.

After several years of therapy, patients may experience a "wearing off" effect so that each dose becomes less active. Others suffer an "on-off" response in that symptom relief alternates with inactivity. Pergolide and selegiline (Eldepryl) are indicated as adjunctive therapy to overcome these problems. and improve the effectiveness of levodopa/carbidopa.

Pergolide, like bromocriptine, is an ergot derivative that is a direct dopamine agonist for receptors in the CNS. This means that these agents, when they react with physiologically active areas on the nerve cells within the CNS, elicit the same response as dopamine. Pergolide decreases the on-off phenomenon of levodopa/carbidopa, and may lead to reduction in the amount of levodopa needed for some patients.

There can be significant adverse effects with pergolide. Among these are nausea and indigestion, diarrhea or constipation, nasal stuffiness, orthostatic hypotension, dizziness, confusion, insomnia or somnolence, and hallucinations. The latter effect is reported to be the leading cause of dropout from therapy.

While no overt drug interactions have been reported, it can be anticipated that dopamine antagonists, such as phenothiazines, haloperidol and metoclopramide may interfere with pergolide. It is also so highly protein bound, that pergolide may displace other drugs from such binding to increase their effects.

To minimize the chance of orthostatic hypotension during initiation of therapy, dosage should be titrated upward from a daily dose of 0.05 mg, possibly to 2 mg over a two- or three-week period. Some patients may require 1 mg three times a day for optimal results. To allow for the gradual titration, Permax is available in 0.05, 0.25 and 1 mg tablets.

Selegiline (1B; Eldepryl). Selegiline inhibits the enzyme monoamine oxidase (MAO). It acts preferentially on one form, termed MAO-B. Selegiline can achieve nearly complete inhibition of MAO-B with doses insufficient to inhibit MAO-A.

Its mechanism of action is referred to as "suicide inhibition." This pharmacologic designation refers to drugs that possess a chemically reactive group which is selectively activated by the target enzyme to convert it to a highly reactive intermediate. The converted form, then, irreversibly binds to and inhibits the enzyme. In other words, selegiline binds with MAO and is converted to its reactive form which then renders MAO inactive. Only subsequent synthesis of new enzyme can replace it. Since synthesis of MAO is a slow process, selegiline generally does not lose its effectiveness with prolonged therapy.

The differentiation of MAO-A from MAO-B is important in understanding why, at therapeutic doses, selegiline does not cause drug interactions characteristic of other MAO inhibitors (e.g., Marplan, Nardil, Parnate). These are nonselective inhibitors because they act on both types of MAO.

Briefly, MAO-A acts in the gut wall and liver. It exerts its greatest effect on endogenous serotonin, and tyramine (as well as other pressor amines) contained in food. MAO-A blockage can result in excessive absorption of dietary pressor amines, leading to massive vasoconstriction and death.

MAO-B is most closely associated with the metabolism of dopamine in the brain. A MAO-B selective drug like selegiline decreases dopamine destruction and increases its availability to overcome symptoms of Parkinsonism without causing the drug interactions. In doses higher than recommended (5 mg bid)

selegiline loses its selectivity for MAO-B, so these interactions can, and have, occurred.

Much of the research on selegiline was conducted in Europe under the generic name deprenyl, so it is possible that it may be prescribed by that name in the U.S. Potential future indications include attention deficit disorder, narcolepsy, depression, Alzeheimer's disease and the initial treatment of Parkinsonism. There is evidence that some patients respond to therapy early in the disease, thus delaying the need for levodopa/carbidopa, and reducing its dose when it is needed.

The recommended dosage as an adjunct to levodopa/carbidopa in patients with the wearing-off or on-off phenomena is 5 mg twice daily, with breakfast and lunch to lessen GI tract upset. Eldepryl is available in 5 mg. tablets.

Clomipramine (1A; Anafranil). Its manufacturer originally sought approval for clomipramine (a chlorinated derivative of imipramine) as an antidepressant in 19975. The application was denied, based on its toxicity profile. The most significant was seizure activity reported at 0.7 percent, five times greater than other antidepressants.

Studies were continued outside the U.S. including investigation for the obsessive-compulsive disorder (OCD). Currently, clomipramine is marketed in approximately 70 countries for depression and/or OCD, and has been available in some for longer than 20 years. On approval in the U.S., clomipramine became the agent of choice for OCD.

Chronic obsessive compulsive disorders reportedly affect over 4,000,000 Americans. Their exact cause is not known, but the current theory is that obsessions, compulsions, or both are caused by imbalances of neurotransmitters in the brain, most specifically, a deficiency of serotonin.

Patients with OCD, on the obsessive side, undergo repeated, unwanted thoughts that intrude into a "normal" thought pattern. These lead to distress, possibly extreme anxiety, because the person usually knows his thoughts are irrational, but cannot change them.

Among the more common compulsions are washing the hands or cleaning the home repeatedly, hoarding useless items, or incessantly talking and repeating the same words. When these interfere with the patient's occupational or social functioning, occupy a significant amount of time or cause undue distress, the person is a candidate for drug therapy.

The exact mechanism of action for clomipramine is unknown. There is evidence that its inhibition of serotonin uptake into nerve endings may be essential to its anti-OCD activity. This allows for more serotonin in the synaptic areas, thus reversing its deficiency. Clomipramine also blocks the reuptake of norepinephrine into storage areas and increased dopamine metabolism. The net result is that obsessions are eliminated and compulsive activity ceases.

The side effect profile is similar to other tricyclic antidepressants (TCAs), i.e., anticholinergic effects, orthostatic hypotension, CNS depression and tremor. It causes cardiac arrhythmias, like other TCAs, in toxic doses. Due to its high incidence of seizures, if clomipramine is to be administered to patients with a history of seizure disorders, it must be given with great caution.

The dosage regimen is 25 mg daily, gradually increased to 100 mg if needed, over a two-week period. Some patients may need 200 mg/day for symptom control. Doses over 200 mg daily exhibit increased side effects without increased therapeutic effect. Anafranil is available in 25, 50 and 75 mg capsules.

Bupropion (1B; Wellbutrin). Bupropion, which is therapeutically similar to, but chemically different from the tricyclic antidepressants, was marketed in late 1985. It was voluntarily withdrawn by its manufacturer in early 1986 due to a high occurrence of seizures in bulimic patients enrolled in a clinical trial. Since then, it has been evaluated for safety in more than 3000 patients. It was found that seizures resulted from doses higher than recommended, and are most common in patients prone to them, rather than patients without a history of seizures. Because of this, bupropion has been re-released for use in treatment of depression. It is contraindicated in patients with a history of seizures, and for treatment of bulimia.

The exact mechanism of action of bupropion is not known. It is not an MAO inhibitor. It does have weak uptake blocking action on norepinephrine and serotonin, and it inhibits

reuptake of dopamine to some extent.

In contrast to traditional tricyclic antidepressants, bupropion does not block cholinergic, alpha-adrenergic or histaminergic receptors. Therefore, it causes fewer, if any, anticholinergic effects, orthostatic hypotension and drowsiness.

Bupropion causes mild stimulation, including insomnia and headache. In concert with its action on dopamine, precipitation of psychosis has been reported in a few patients. In contrast with TCAs, it causes fewer cardiovascular effects. Weight loss is often associated with therapy. Patients with mild congestive heart failure seem able to tolerate bupropion, even when they cannot tolerate other antidepressants.

Bupropion may be involved in several drug interactions. Because it is metabolized in the liver, drugs that enhance enzyme production and activity (e.g., carbamazepine, phenytoin, phenobarbital, rifampin) may decrease activity. Since both bupropion and levodopa affect dopamine activity, together they may cause increased side effects. The above interactions are hypothetical rather than proven. Concurrent use, or use within 14 days of an MAO inhibitor, is contraindicated.

The recommended dose of bupropion is 100 mg twice a day, morning and evening initially, increasing to 150 mg tid. The manufacturer strongly warns against individual doses greater than 150 mg, or daily doses greater than 450 mg due to the potential for seizures. Wellbutrin is available in 75 and 100 mg tablets.

Clozapine (1A; Clozaril). Clozapine was first synthesized in 1960 and marketed in Europe later that decade. Clinical trials were initiated in the U.S. in the 1970s. Reports of mortality due to agranulocytosis brought U.S. research to an almost complete halt. But interest continued, and the drug was given compassionate-use status for selected patients who did not improve on traditional therapy (chlorpromazine, etc.). After the potential for agranulocytosis became known, with proper monitoring, the occurrence dropped to 1 percent or less.

The manufacturer initially requested approval to market the drug in 1983. The request was denied because of a high incidence of agranulocytosis, and insufficient data to establish superior efficacy in light of known toxicity. With continued investigation, it was shown that after six months of therapy, up to 50 percent of schizophrenic patients taking clozapine, who were not helped by conventional therapy, improved. With proper WBC monitoring and drug withdrawal when signs of agranulocytosis appeared, the death rate decreased. None have been reported in this country. FDA approved the drug for treatment of patients with schizophrenia that do not respond to conventional therapy in September, 1989.

Clozapine joins loxapine (Loxitane) as a dibenzodiazepine antipsychotic. However, it differs therapeutically in that it does not cause the extrapyramidal (Parkinson-like) symptoms associated with other antipsychotics.

Clozapine's mechanism of action is believed to be due to blockage of dopamine in the brain (schizophrenia is thought to be caused by excessive dopamine levels). Clozapine has specific action on dopamine receptors in the limbic area, and this specificity may account for the lack of extrapyramidal symptoms relative to other antipsychotics which block dopamine in both the limbic and striatal areas. There are no documented cases of tartive dyskinesia, a condition usually seen in about 15 percent of patients on other antipsychotic drugs.

Other antipsychotic-induced afflictions not noted with clozapine are rigidity, mask-like facial expressions, or slowed movements. These effects are causes of discontinuation of therapy of other antipsychotic drugs.

Adverse effects of clozapine include hypersalivation, sedation, dizziness, tachycardia, orthostatic hypotension, fever and constipation. Hypersalivation and dizziness usually diminish after the first two weeks of therapy. Seizures were seen in approximately 5 percent of patients in clinical trials. These were dose-related and most prevalent in epileptic patients. While of concern, decreased seizure control is reported for all antipsychotic drugs.

The dosage of clozapine is 100 to 150 mg once or twice daily initially. This can be increased in 25 to 50 mg/day increments over a two-week period to reach an optimal dose of 300 to 450 mg daily. Rarely, patients may need 900 mg/day for full therapeutic effects. Clozaril

Table 1
Summary of Adverse Events in Two Multiple-Dose Efficacy Studies*

	Toradol 30 mg (n = 509)		Morphine 10 & 12 mg (n = 151)	
Number of Patients Reporting:**				
Any Body System/Any Adverse Event	197	(39%)	106	(70%)
Nervous System	116	(23%)	67	(44%)
Digestive System	66	(13%)	43	(28%)
Skin and Appendages	5	(1%)	21	(14%)
Injection Site	19	(4%)	11	(7%)
Cardiovascular System	18	(4%)	4	(3%)
Urogenital System	2	(<1%)	6	(4%)
Body as a Whole	8	(2%)	5	(3%)
Musculoskeletal System	2	(<1%)	3	(2%)
Metabolic/Nutritional Disorders	3	(1%)	2	(1%)
Respiratory System	4	(1%)	2	(1%)
Special Senses	6	(1%)	2	(1%)
Hemic and Lymphatic System	2	(<1%)	1	(1%)
Number of Patients Terminating Early Due to Adverse Events	35	(7%)	26	(17%)

*Excludes events considered probably not related to the treatment drug.
**A patient is counted once for a body system if he reports one or more complaints for that body system.

is available in 25 and 100 mg tablets.

Propofol (1B; Diprivan). Propofol is an intravenous anesthetic for induction and maintenance of general anesthesia for most surgical procedures. It is used alone or in combination with other anesthetics. It has a rapid onset of action, usually within 30 to 40 seconds from start of infusion, and lasts 3 to 10 minutes, depending on the dose and rate of administration, which is monitored throughout surgery.

Propofol shares the adverse effects of other general anesthetics including pain at the site of injection, apnea, excitement and hypotension during induction, nausea and vomiting during recovery and residual sedation after surgery (less than previously available anesthetics).

This last property, i.e., more prompt recovery from anesthesia, is a marketing tool. During clinical trials, patients were able to return more quickly to self-care, thus requiring less monitoring by recovery room staff. They were also able to tolerate orally administered fluids faster and were alert sooner.

The dosage is individualized, usually 2 to 2.5 mg/kg averaging 40 mg every 10 seconds for induction, and 0.1 to 0.2 mg/kg/minute for maintenance of anesthesia. Diprivan is available in a concentration of 10 mg/mL in 20 mL glass ampules.

Ketorolac (1B; Toradol) This drug has analgesic, anti-inflammatory and antipyretic actions characteristic of nonsteroidal anti-inflammatory drugs (NSAIDs) in general. Ketorolac inhibits the action of cyclooxygenase which, in turn, inhibits prostaglandin synthesis, relieving pain. Pain relief from ketorolac may be evident within 10 minutes of an intramuscular injection.

The drug is not an opioid. It therefore does not cause typical adverse effects characteristic of opioids. Patients receiving ketorolac have not developed tolerance to it, and drug discontinuation does not cause signs of with-

drawal. Since it is only approved for short-term use, parenteral ketorolac is not indicated for treatment of rheumatoid disorders and no attempt was made to market it for fever reduction.

In controlled trials, ketorolac was associated with fewer adverse effects, and less discontinuance of therapy due to adverse effects, than either meperidine or morphine (Table 1). Adverse effects related to nervous and digestive symptoms are among the most common with both ketorolac and narcotics, but are reported twice as often with morphine than ketorolac.

Since ketorolac is an NSAID, it is synergistic to, and may be used concomitantly with, opioids. However, they are incompatible and should not be mixed in the same syringe.

Ketorolac is contraindicated in persons with previous hypersensitivity to aspirin or other NSAIDs, or in patients who have experienced nasal polyps, angioedema, or bronchospasm caused by aspirin. Use in persons with impaired renal function or a history of kidney disease must be undertaken with caution and in reduced doses. Because it is reported to lead to fluid retention and edema, ketorolac should be used cautiously in patients with cardiac or hypertensive disorders.

Since it is not a scheduled drug, nurses and pharmacists are relieved of the paperwork of the Controlled Substance Act. This is an important marketing point.

The dosage is 30 to 60 mg by intramuscular injection initially, and 15 to 20 mg IM every 6 hours when needed, up to 120 mg daily. Toradol is available in 15 mg/mL and 30 mg/mL syringes containing 1 mL, and a 2 mL syringe with the 30 mg/mL concentration for a 60 mg dose.

Dezocine (1C; Dalgan). A new synthetic opioid agonist/antagonist, dezocine is an effective analgesic for pain of surgery and cancer. In equipotent doses, it is comparable to morphine in efficacy and safety. Dezocine is claimed to cause fewer side effects than morphine with little or no abuse potential. Therefore, like ketorolac, it is not a controlled substance.

The drug joins butorphanol (Stadol), nalbuphine (Nubain) and pentazocaine (Talwin) in the category of analgesics with mixed agonist and antagonist effects. Its opioid antagonistic action is greater than pentazocine, but less than nalorphine. What little respiratory depression dezocine causes can be reversed with nalorphine.

The exact mechanism of action for analgesics has not yet been determined. The current theory is that when pain occurs it is due to chemicals released from affected cells. These stimulate nerve endings to initiate a series of events that the brain interprets as pain.

The discovery that opiates block receptors was made before the endogenous receptor-blocking substances were elucidated, so they have been given the name "opiate receptors." It is theorized that opioid analgesics bind at these receptor sites, and prevent the action of pain-inducing neurotransmitters, thus providing analgesia and also potential side effects. Four have been identified to date: delta, kappa, mu and sigma receptors.

Dezocine is claimed to be an ideal analgesic because it has high activity on the mu and delta opioid receptors, less activity on kappa receptors, and even less on sigma receptors than other agonist/antagonist opioids. Since action on kappa and sigma receptors is thought to be responsible for CNS effects associated with narcotic abuse, Dalgan will be marketed as the least-likely-to-be-abused opioid analgesic available.

The dosage is 5 to 10 mg intravenously or 10 to 15 mg intramuscularly every 3 to 4 hours with the dosage titrated to relieve the patient's pain. The maximum single dose is 20 mg with a recommended daily dosage limit of 120 mg. Dalgan is available in 5 mg/mL, 10 mg/mL and 15 mg/mL strengths.

Summary

This discussion of new drugs will be continued and concluded in Part III of this series. •

CORRESPONDENCE COURSE QUIZ

New Drugs: Part II

1. The new drug that is categorized as a nonsteroidal anti-inflammatory (NSAID) agent is:
 a. Anafranil.
 b. Clozaril.
 c. Toradol.
 d. Wellbutrin.

2. All of the following drugs are indicated for adjunctive therapy with levodopa/carbidopa in treatment of Parkinsonism EXCEPT:
 a. Eldepryl.
 b. Parlodel.
 c. Parnate.
 d. Permax.

3. Which of the drugs referred to in question #2 above acts by inhibition of MAO-B?
 a. Elderpryl
 b. Parlodel
 c. Parnate
 d. Permax

4. Which of the following adverse effects represents the greatest concern common to use of bupropion, clomipramine and clozapine?
 a. Agranulocytosis
 b. Loss of libido
 c. Parkinson-like effects
 d. Seizures

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5. All of the following are categorized as analgesics with mixed agonist and antagonist effects EXCEPT:
 a. butorphanol.
 b. dezocine.
 c. nalbuphine.
 d. propoxyphene.

6. The drug approved for treatment of patients with schizophrenia unresponsive to conventional therapy is:
 a. Anafranil.
 b. Clozaril.
 c. Toradol.
 d. Wellbutrin.

7. Of the following, the property of propofol that reportedly will be its greatest marketing tool when compared to other general anesthetics is its:
 a. reduced pain at the site of injection.
 b. slower onset of action.
 c. lower order of hypotension.
 d. more prompt recovery from anesthesia.

8. The symptoms experienced by patients with Parkinsonism are believed to be caused by an insufficient amount of which of the following neurotransmitters in the CNS?
 a. Acetylcholine
 b. Dopamine
 c. Endorphins
 d. Serotonin

9. The drug approved for treatment of obsessive-compulsive disorders is:
 a. Anafranil
 b. Clozaril
 c. Toradol
 d. Wellbutrin

10. Ketorolac exerts each of the following actions EXCEPT:
 a. inhibition of cyclooxygenase.
 b. inhibition of opioid receptors.
 c. inhibition of prostaglandin synthesis.

WELCOME, NEW MEMBERS!

The following pharmacists have become members of the NCPhA since the publication of the February journal issue. They join more than 2,600 colleagues in the Association who are committed to advancing pharmacy in North Carolina.

Ana Maria Cortes Spancake, *Cary*
Ken Cawthorne, *Raleigh*
Linda Deas, *Salisbury*
Ginger L. Hartsoe, *Winston-Salem*
Mike Ihrie, *Pittsboro*
Tina Mason, *Chapel Hill*
Alan Parr, *Cary*
Kenneth R. Phares, *Durham*
Patti J. Tarlton, *Durham*
Kristen Scheble, *Chapel Hill*
Glenda Waslaski, *Raleigh*
Robert Steven Bullock, *Cary*
Pam Corrigan, *High Point*
Beverly Diane Graham, *Winston-Salem*
Maxine Hammel, *Raleigh*
Richard Hammel, *Raleigh*
Mary Grace Hobbs, *Greenville*
Melissa A. Jackson, *Danville VA*
Melinda L. Long, *Hickory*
Jo W. McCall, *Concord*
Leslie Mackowiak, *Chapel Hill*
Linda J. Parham, *Greenville*
Lloyd James Rouhselang, *South Bend IN*
James W. Russell, *Flushing MI*
Angela L. Smith, *Jacksonville*
Carolyn J. Trapp-Heuser, *Carrboro*
J. Mark White, *Mocksville*

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CONTINUING PHARMACEUTICAL EDUCATION (CPE)

New Drugs: Part II

- Attach a mailing label from The Carolina Journal of Pharmacy or print your name and address and mail to: CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514.
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of Board-approved CPE credit.
- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

Please circle correct answer

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c d
		10. a b c

Evaluation of material: Excellent Good Fair Poor

Name _____

Address _____



This column features news briefs about people and events related to pharmacy around the state. The NCPhA staff welcomes your comments and any contributions you wish to make to this column. Photos (black and white) are also welcome. Send us your news!

In the News

McPhail's Pharmacy, located in the center of downtown Lillington, opened Monday, January 9. Owner **Neil McPhail** was joined by a large crowd for the official ribbon-cutting ceremony, including Lillington Mayor Lincoln Faulk, Lillington Chamber of Commerce President Edna Holbrook, and N.C. Mutual Wholesale Drug Co. Executive Vice President and CEO Don Peterson. Emergency night service is offered by the pharmacy. McPhail is a 1976 UNC School of Pharmacy graduate. He serves on the board of directors of Central Carolina Bank in Erwin and serves as a member of the Lillington Area Chamber of Commerce. He and his wife, Cindy, have two children, Brian, 7, and Hayley, 4.

Ground-breaking ceremonies for a $1.1 million, 9,000-square feet addition to **Campbell University's School of Pharmacy** took place on December 8, 1990. **W. Whitaker "Whit" Moose** was the keynote speaker. Also delivering remarks during the ceremony was NCPhA President **J. Frank Burton.**

Davie Waggett is now working at Drugo Discount Pharmacy in Roanoke Rapids. He is a 1978 graduate of the UNC School of Pharmacy. He and his wife, Charlene, have two children, a 7-year old son, Blair, and a 5-year old daughter, Brooke.

Dick Raines is a pharmacist at Bailey Pharmacy. He has worked in Bailey for 13-1/2 years since his move from Tarboro. He and his wife, Diane, have two children.

Randy Ball of Wake Forest spoke to the Lions Club on February 4. Ball, a pharmacist for Revco, alerted the audience to several factors of primary importance in getting proper value from both the pharmacist and the pharmacy. Among the items addressed were: cost, qualifications of a pharmacist, developing a rapport with one's pharmacist, availability of records, generic drugs, and the emergency availability of pharmacy sources.

For 82 years, Tart and West Druggists has been serving the residents of Roseboro. Originally established by D.W. Tart under the name of D.W. Tart Druggist, the store gained its present name in 1939 when his nephew, Latham West, also a pharmacist, purchased an interest in the business. In 1950, **W. Artemus West** joined his father and his uncle upon graduating from the UNC School of Pharmacy. In 1975, **Thomas L. West**, became a fourth generation pharmacist in the West family to join the business.

Lynn C. Wall, president of Selma Drug Co. in Selma, has opened a pharmacy in Pine Level, the first pharmacy in the city in more than ten years.

The Campbell University School of Pharmacy has received the Lutterloh Collection of Pharmacy and Medical Artifacts. The valuable collection was donated by Dr. I. Hayden Lutterloh Jr. in memory of his grandfather, Dr. Isaac Henderson, a pharmacist and a physician, and his uncle, Thomas H. Lutterloh, a pharmacist. The collection contains historical artifacts dealing with pharmacy and medicine such as: drugs and chemicals used for compounding prescriptions, ground glass apothecary jars, medical textbooks dating to the 1850s, and surgical and pharmaceutical instruments used before the Civil War.

Appointments

Charles Stevens was elected as a board member to the Benson Area Chamber of Commerce. Stevens is owner of Benson Drug Co., Inc. He and his wife, Betsy, have two daughters, Beth and Kathy, and three grandchildren.

Samuel G. Koonce of Chadbourn has been named honorary chairman of the Southeast-

ern Community College (SCC) Foundations's 15th annual Dinner Theatre. Koonce is a charter member of SCC's Board of Trustees and has chaired the Board twice. He is also a founding director of the SCC Foundation which was started in 1982. In addition to his involvement with the college, he is serving a second four-year term as a county commissioner. Koonce graduated from the UNC School of Pharmacy in 1948.

Margaret C. Yarborough of Sims has been appointed to the Campbell University faculty as an assistant professor in the School of Pharmacy.

The N.C. Society of Hospital Pharmacists has installed new officers and members of the board of directors. NCPhA members among the newly installed officers are: **Cindy Bishop** of Gaston Memorial Hospital, Gastonia, president, and **Leslie Mackowiak** of Duke University Medical Center, Durham, president-elect.

Lynn C. Wall, president of Selma Drug Company, has been elected to serve on First Citizens Bank's local board of directors in Selma. As a member of the board, Wall will assist bank management with business development and policy matters, and she will serve as a liaison between the bank and the community.

Jack G. Watts of Burlington has been elected to a second term as a member of Campbell University's Board of Trustees.

Awards, Honors, Citations

In *Drug Topics* magazine, the Johnson Drug Co. in Jacksonville, owned by **Willis Ray Johnson III** and **Larry E. Denning,** was named as an outstanding pharmacy in the area of "handling a crisis;" in the category of "exceptional performance" were Riegelwood Mutual Drug, Riegelwood, owned by **John Parks Thomas** and Scotty Discount Drugs, Kernersville, owned by **F. Hampton Langdon**; in "exceptional merchandising," Drugcare of Currituck, Grandy, owned by **Don Heaton** and **Tom Burgiss**; and in "overcoming competition," Anderson Drug Store, Elizabethtown, owned by **Eugene G. Anderson.**

Thomas F. Hughes, clinical associate professor in the UNC School of Pharmacy, received the 1990 Hospital Pharmacist-of-the-Year Award from the N.C. Society of Hospital Pharmacists.

J. Frank Burton of Burton's Pharmacy in Greensboro was the recipient of the Merck Sharp & Dohme (MSD) Pharmacist Achievement Award. The award was established by MSD, the U.S. prescription drug division of Merck & Co., to recognize professional and civic achievements of pharmacists. Burton was cited for his selection as president of NCPhA and his involvement in community activities.

Martha Lyon, director of pharmacy services at Lexington Memorial Hospital (LMH), is one of 11 recipients of the Continuing Excellence Award from the North Carolina Society of Hospital Pharmacists. The award recognizes hospital pharmacy practitioners for continuing excellence in pharmacy practice. Lyon holds a B.S. degree in pharmacy from the Medical University of South Carolina in Charleston. She has been at LMH since 1978.

Donald Smith, owner of Coats Pharmacy was recognized by the Coats Chamber of Commerce as the Business Focus of the Week.

Weddings

Jonnie Barbour McLain and **Samuel L. "Sam" George** were married November 5. Both are graduates of the UNC School of Pharmacy; Mr. George is a 1974 graduate and Mrs. George, a 1978 graduate. Both are pharmacists with Rite Aid. The couple resides in Four Oaks.

Myra Susan Cox of Ramseur and Sandy Kevin Greene of Liberty were married December 29. Mrs. Greene is a 1982 graduate of the UNC School of Pharmacy. She is employed by Rite Aid pharmacy. The couple resides in Raleigh.

Henrietta Lynne Lee and Jeffery Duan Hines were married November 17. Mrs. Hines is a graduate of the UNC School of Pharmacy and is employed by Kerr Drugs in Clayton. Mr. and Mrs. Hines reside in Garner.

Cynthia Louise Huters of Raleigh and **Mark Fletcher Sanders** of Durham were married on January 12. Mr. Sanders, a 1978 graduate of the UNC School of Pharmacy, is a pharmacist with Rite Aid in Durham. The couple resides in Durham.

Vickie Renee Talton and Christopher Lee Bulluck were wed on January 26. Mrs. Bulluck is a 1990 graduate of the UNC School of Pharmacy. She is employed by Kerr Drug in Wilson. Mr. and Mrs. Bullock reside in Battleboro.

Teresa Diane Craig of Hudson and **James Douglas Robertson** of Lenoir, became husband and wife on December 22. Mr. Robertson is a 1989 graduate of the UNC School of Pharmacy. He is employed with Wal-Mart in Lenoir. Mrs. Robertson is currently attending the UNC School of Pharmacy.

Kimberly Dawn Biggs of New London and Darryl James Ysteboe of Winston-Salem were united in marriage on December 15. Mrs. Ysteboe is a UNC School of Pharmacy graduate. She is a pharmacist with Revco in Denton. The couple lives in Badin Lake.

Births

Jerry and Sarah Cobb of Southern Pines announce the birth of their first child, Shannon Beale Cobb, on February 24, 1991. She weighed 6 lbs., 11 oz. Jerry is a 1982 graduate of the UNC School of Pharmacy. He is employed by Medical Center Pharmacy in Pinehurst. Sarah is a 1984 graduate of the UNC School of Pharmacy. She is a professional sales representative with Merck Sharp & Dohme.

Deaths

Gerald K. "Jerry" Harrington, Wilmington, died Monday, December 24, 1990. He was 55 years old. Harrington was a 1957 graduate of the UNC School of Pharmacy and the owner of Toms Drug Store in Wilmington. He served in the US Air Force after graduation and had been employed in Fayetteville and Sanford before his affiliation with the Toms store.

Wilbur S. Ward, Swannanoa, died Wednesday, January 30, 1991 at the age of 63. A native of Swannanoa, Ward graduated from the UNC School of Pharmacy in 1951. He had worked in pharmacies in Western North Carolina, including ownership of the family pharmacy he bought from his father in Swannanoa and the Valley Drugs Pharmacy in Candler.

Clifton Adolphus "C.A." Ring Jr., Chapel Hill and formerly of High Point, died December 18, 1990. He was 83 years old. He was a 1926 graduate of the UNC School of Pharmacy and was associated with his father in C.A. Ring and Son Drugs in High Point until 1960.

Hoy Archibald Moose, Mount Pleasant, died Wednesday, January 30, 1991 after an extended illness. Moose was 87 years old. He was a 1927 graduate of the UNC School of Pharmacy and was licensed in 1927. He served as president of the NCPhA in 1963-1964 and was chosen N.C. Pharmacist-of-the-Year in 1969. He was the owner-operator of Moose Drug Company, founded by his father, A.W. Moose, in 1882. He was active in professional and civic life, serving as mayor of Mount Pleasant and also on the town board of commissioners for over 20 years, as well as countless boards and commissions. Besides the Mount Pleasant store, Moose had an interest in the Moose Drug Company of Albemarle and Troy. *Memorials may be sent to the Hoy and Polly Moose Memorial Loan Fund, in care of the NC Pharmaceutical Association in Chapel Hill.*

Gerald M. Stahl, Durham, died suddenly on Monday, March 4, 1991, at the age of 68. Stahl was born in Germany and received his B.S. in Pharmacy from the School of Pharmacy, Medical College of Virginia and M.S. in Pharmacy from the University of Tennessee School of Pharmacy. He moved to North Carolina in 1952 and was associated with Watts Hospital and Durham County General Hospital as Director of Pharmacy until his retirement in 1989. He was a past-president of the NC Society of Hospital Pharmacists. After retirement, he was active as Student Clerkship Coordinator for Campbell University School of Pharmacy. *Memorials may be sent to the Gerald M. Stahl Memorial Loan Fund, in care of the NC Pharmaceutical Association in Chapel Hill.*

George Edward Clark, Warsaw, died March 3, 1990. He was 69 years old. Pharmacist-owner of Clark's Drug Store in Warsaw, he was a graduate of the University of North Carolina at Chapel Hill. He operated Clark's Drug Store in Washington prior to moving it to Warsaw in 1949. •

CLASSIFIED ADVERTISING

Classified advertising rates are 25 cents a word for members with a minimum of $5.00 per insertion and for nonmembers, classified ads are 50 cents a word with a minimum charge of $10.00 per insertion. Ads are accepted for a single issue or specific time period only. The closing date for ad orders is the first of the month preceding the issue in which you are requesting insertion. Payment for ad orders will be billed. Names and addresses will be published unless an ad number for a blind ad is requested. In replying to blind ads, send to Ad (), c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. Telephone 800-852-7343 (in state) or 919-967-2237.

Pharmacies For Sale

PHARMACY FOR SALE: Don't miss an exceptional opportunity to become your own boss in a professional atmosphere. An established prescription-oriented pharmacy located in the Winston-Salem area is offered for individual ownership. This opportunity will allow you the freedom to cut your hours, spend evenings, Sundays and holidays with your family and to practice your profession the way you were taught. For detailed information, call John Aumiller 800-325-1397.

DRUG STORE FOR SALE: Wilmington, same location 48 years. Full service and easy operation. Limited competition—some financing. Contact: Bullock & Whaley, 919-395-5898 or P.O. Box 3764, Wilmington, NC 28406.

PHARMACY FOR SALE: Located in Piedmont, NC. Volume $570,000; accounts receivable $25,000; inventory $75,000. No fountain. Open 55 hours per week. Some financing. Price: $162,500. Bullock & Whaley, 919-395-5898 or P.O. Box 3764, Wilmington, NC 28406.

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Community Pharmacist Positions

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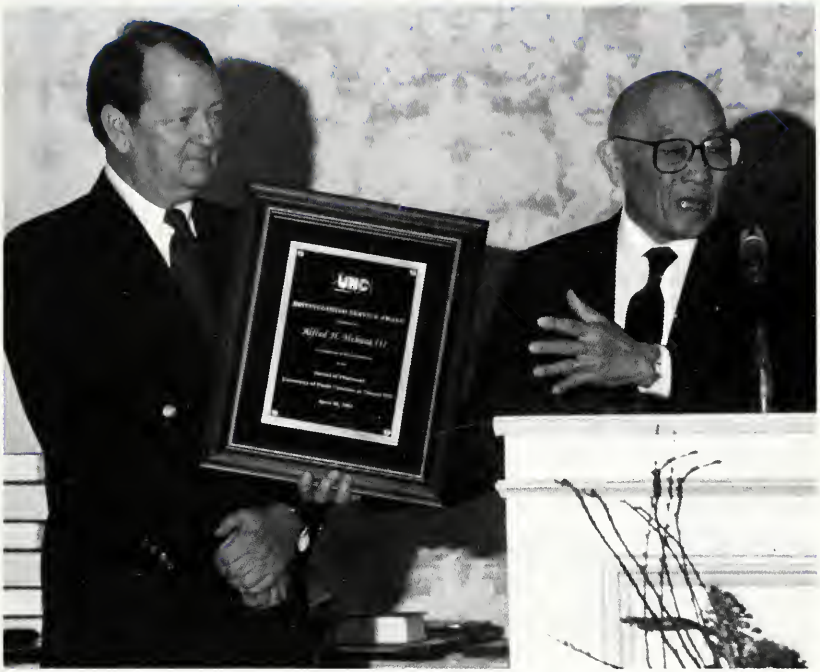
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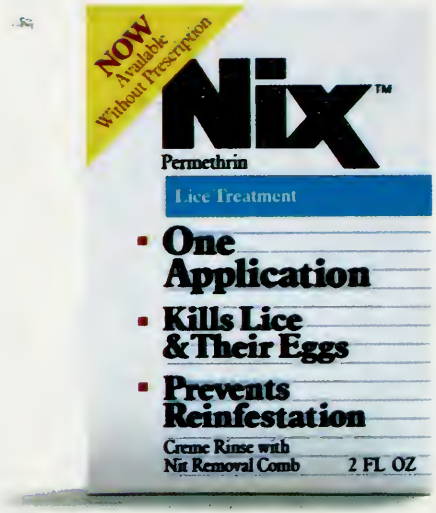
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Officers
North Carolina Pharmaceutical Association

President
J. Frank Burton
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Vice Presidents
Betty H. Dennis
104 Calumet Court
Carrboro, NC 27510
919•962•0030

Joseph A. Edwards Jr.
2025 St. Mary's Street
Raleigh, NC 27608
919•833•7558

Henry L. Smith
P.O. Box 147
Farmville, NC 27828
919•753•7111

Journal Staff

Editor
Alfred H. Mebane III

Managing Editor
Kathryn K. Jefferson

Editorial Assistants
Erie C. Cocolas
Terri M. Little

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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THE PRESIDENT'S PAGE

J. Frank Burton
NCPhA President

"The President's Address"

presented at the
NCPhA 111th Annual Convention
Thursday, May 23, 1991



As I reflect on the past 12 months in which I have been privileged to serve this Association as its President, the title of an old Sinatra song comes to mind. With my apologies to "Old Blue Eyes" for borrowing his lyric, "It was a very good year"! With your help, we have accomplished a great many things this year, and begun to build the foundation for a number of projects that will further enhance NCPhA's role in the pharmacy profession for years to come.

When my year began, there was still great hope that the bill introduced in the U.S. Senate by Senator David Pryor known as "PAPPA" would be adopted relatively intact. NCPhA actively supported this legislation, with letters to our U.S. Senators, Helms and Sanford. But as we all know by now, only parts of the original Senate Bill 2605 ultimately became law under the Omnibus Budget Reconciliation Act, or "OBRA 90." This was a major victory for those of us who have complained for years that the Health Care Finance Administration (HCFA) and many state governments were placing far too great a share of the cost containment burden for Medicaid on pharmacists.

Another effort that NCPhA has been actively involved in this year is to build on the work begun at the Pharmacy in the 21st (P-21) Century Conference. Under the guidance of Chairman Bill Edmondson, the North Carolina P-21 Commission, consisting of pharmacists from every practice discipline, developed a mission statement for N.C. pharmacy that is being submitted at this annual meeting. Phase Two, a plan for implementation, is now underway. The long range planning being done by this committee is essential to N.C. Pharmacy's ability to identify its goals and work to achieve them!

A project that NCPhA is very proud of is the production of a videotape to aid pharmacists in identifying and counseling illiterate and low-literate patients. Funded by the 1990-91 Upjohn/National Council of State Pharmaceutical Association Executives educational grant for pharmacy association projects, and guided to completion by our own Kathryn Jefferson and NCPhA staff, this videotape is already in great demand on the national level! Not only is this project bringing recognition to our Association, it provides pharmacists with an excellent tool to combat the problem of medication compliance by the illiterate patient, a problem NCPhA's Women's Auxiliary tackled earlier with its distribution of the pictogram illiteracy poster to every drugstore in the state.

We have also had some success this year in our efforts to combat the growth of mail order pharmacy programs. With the help of the N.C. Pharmacy Network, the chain drug stores, and many individual pharmacists, NCPhA has been involved in preventing several mandatory mail order plans from being implemented. For example, in the case of Coca Cola Consolidated, NCPhA brought about the reversal of a mandatory mail order plan that was already in operation for the company's active employees. This was accomplished by telephone calls, meetings, and letters written to the corporate executives responsible for decisions about employee or customer benefits. All communications with these decision makers were designed to deliver the message that by denying individuals the freedom of choice to have

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their prescriptions filled at their community pharmacy, they were also denying access to the quality pharmacy services that can only be rendered by the local pharmacist. There is still much work to be done on this front and we must continue our vigilance!

This past October, NCPhA, in conjunction with NCSHP and with the generous support of Burroughs Wellcome and Glaxo, mounted its most ambitious N.C. Pharmacy Week project to date. N.C. Pharmacy Week 1991 will be held in conjunction with the first ever National Pharmacy Week, October 20-26. So that NC Pharmacy Week will be the best ever, a public relations consultant has been retained to help the NC Pharmacy Week planning committee focus on those things that will make the biggest impact, given time, manpower, and budget considerations.

Another project that has brought gratifying results is the Institute of Pharmacy Repair Fund. Initiated by my predecessor Ralph Ashworth, a call went out to individuals, companies, and local pharmacy associations to help NCPhA raise through contributions enough money to pay off the $35,000 loan that was necessary to complete much needed repairs to the Institute of Pharmacy. The special place that this building holds in N.C. Pharmacy was quickly apparent as contributions and pledges, large and small, came in from all over the state! In a relatively short time, our concerns about meeting this financial obligation were quelled!

Since the N.C. General Assembly convened in late January, a great deal our time has been devoted to obtaining support for NCPhA's legislative initiatives as recommended by the Committee on State Legislation. Our major emphasis has been on bills to 1) give the Board of Pharmacy statutory authority to charge specific fees for registration of PA's, FNP's, and MD's who dispense prescriptions, and for registration of prescription dispensing sites and sites engaged in device dispensing; 2) insure freedom of choice for members of third party plans by prohibiting exclusive provider contracts or mandatory mail order provisions that don't give other providers an opportunity to participate; and 3) legislation to improve the level of Medicaid reimbursement in N.C. We have also joined several other groups involved in health care delivery to oppose triplicate prescription form legislation.

Perhaps, what I am most proud of this year is the work undertaken by NCPhA's Committees! Committee chairmen were challenged early on to get their committees together as soon as possible to develop their agendas and their projects, and to really take seriously the role of committees as a major source of member input and guidance for the Executive Committee. To facilitate this, every member of the Executive Committee was assigned as a liaison to a specific committee. The response was outstanding. Programs, projects, and recommendations developed by such committees as Third Party, Employer/Employee Relations, Constitution and Bylaws, Public and Professional Relations, Public Health, and the already mentioned N.C. Pharmacy Week and State Legislation Committees, will impact NCPhA's activities now, and well into the future. Details of these projects and resolutions will be reported in later issues of *The Journal* and are available in printed committee reports from the NCPhA office.

The only major disappointment I have experienced this year is our failure to increase NCPhA's membership among the over 5,000 pharmacists practicing in N.C. The increase in dues to $100 for 1990, despite the obvious need and justification for that increase, proved too great a hurdle to overcome. I am confident the new NCPhA leaders who will be installed at the 111th Annual NCPhA Convention, with your help, will work diligently toward the goal of large increases in membership. Growth in our membership is important as we strive to make this association the most effective voice for pharmacy that it can possibly be!

Lastly, I want to thank the NCPhA staff for all their help this year. Without Al, Kathryn, Betsy, Terri, and Erie, I would not have been able to stand up here and tell you what a great experience this year has been for me! Once again, they have outdone themselves in planning another great Convention. Now it is our job to take what we experience here in Winston-Salem and build upon it to improve our profession and our Association. Thank you. •

Table 1. Current Trends in Pharmacy Operations in the United States, 1988-1989**

Averages Per Pharmacy	1989 (1,684 pharmacies)	1988 (1,858 pharmacies)	Amount and Percent of Change
SALES			
Prescription	$584,539—72.1%	$529,360—68.9%	+55, 179—10.4%
Other	226,002— 27.9%	238,452—31.1%	-12,450—5.2%
Total Sales	$810,541—100.0%	$767,812—100.0%	+42,729—5.6%
COST OF GOODS SOLD	558,124—68.9%	525,731—68.5%	+32,393—6.2%
GROSS MARGIN	$252,417— 31.1%	$242,081—31.5%	+10,336—4.3%
EXPENSES			
Proprietor's or Manager's salary	$48,125— 5.9%	$ 45,535—5.9%	+2,590—5.7%
Employees' wages	75,298— 9.3%	72,658—9.5%	+2,640—3.6%
Rent	18,798— 2.3%	17,976—2.3%	+822—4.6%
Miscellaneous Operating Expenses	85,304— 10.6%	82,662—10.8%	+2,642—3.2%
Total Expenses	$227,525— 28.1%	$218,831—28.5%	+8,694—4.0%
NET PROFIT (before taxes)	$24,892— 3.1%	$23,250—3.0%	+1,642—7.1%
Add proprietor's withdrawal	48,125— 5.9%	45,535—5.9%	+2,590—5.7%
TOTAL PROPRIETORS INCOME	$73,017— 9.0%	$68,785—8.9%	+4,232—6.2%
VALUE OF INVENTORY AT COST AND AS A PERCENT OF SALES			
Prescription	$59,469— 10.2%	$53,931—10.2%	+5,538—10.3%
Other	47,835— 21.2%	48,605—20.4%	- 770—1.6%
Total Inventory	$107,304— 13.2%	$102,536—13.4%	+4,768—4.7%
ANNUAL RATE OF TURNOVER OF INVENTORY	5.4 times	5.1 times	
FLOOR AREA*	2,793 sq. ft.	2,879 sq. ft.	- 86—3.0%
Sales Per Square Foot*	$290.20	$264.88	+25.32—9.6%
Rent Per Square Foot*	$6.73	$6.24	+0.49—7.8%
NUMBER OF PRESCRIPTIONS DISPENSED			
New	16,510— 51.9%	17,210—54.0%	- 700—4.1%
Renewed	15,310— 48.1%	14,681—46.0%	+629—4.3%
Total Prescriptions	31,820— 100.0%	31,891—100.0%	- 71—0.2%
PRESCRIPTION CHARGE	$18.37	$16.60	+1.77—10.7%
NUMBER OF HOURS PER WEEK			
Pharmacy was open	60 hours	60 hours	0
Worked by proprietor	55 hours	54 hours	+1
Worked by employed pharmacist(s)	26 hours	30 hours	- 4
PERCENT OF TOTAL PRESCRIPTIONS COVERED BY:			
Medicaid	16.8%	17%	
Other third party	22.3%	23%	

* Based on averages of pharmacies that reported all data.
*** Source: 1990 Lilly Digest.*

1990 LILLY DIGEST AVERAGES OF SELECTED OPERATING STATISTICS: EXECUTIVE SUMMARY

For the 40th consecutive year, participating *Lilly Digest* pharmacies reported increased sales, setting a new record—a U.S. average of $810,541. (Table 1) Average **total sales** for 212 participating pharmacies in the South Atlantic states (DC, DE, FL, GA, MD, NC, SC, VA, WV) was a low $761,471. (Table 2) The 47 N.C. pharmacies which submitted operating data to the *Lilly Digest* averaged total sales greater than both the U.S. and South Atlantic region at $867,328. (Table 3)

Although total pharmacy sales in the U.S. increased during 1989, the **cost of goods sold** also advanced, resulting in an average U.S. **gross margin** decrease to 31.1%—the lowest in the history of the *Lilly Digest*. North Carolina pharmacies fared better than the U.S. with an average gross margin of 32.1% — up from 30.7% reported in 1988. The South Atlantic states as a whole reported an average gross margin essentially equal to the U.S. average at 31.2%.

It is interesting to note that in light of the decrease in U.S. gross margin percent, **gross margin dollars** increased to over $250,000, the highest in the history of the *Lilly Digest*. The gross margin dollars reported by N.C. pharmacies averaged even higher at $278,594, a 9.4% increase from 1988. In contrast, the South Atlantic states as a whole reported a much lower gross margin dollar figure of $237,555.

Across the U.S., **prescription sales** increased 10.4% (9.4% for the South Atlantic region; 11.9% for N.C.), while other sales decreased 5.2% (6.4%, South Atlantic region; 11.3%, N.C.) from the previous year. In the typical *Lilly Digest* community pharmacy, prescription income accounted for 72.1% (73.8% South Atlantic region; 73.3%, N.C.) of total sales. This represents a new record in total prescription sales as well as prescription revenue as a percent of total sales.

As a result of a decline in employee wages and miscellaneous expenses as a percent of total sales reported by U.S. pharmacies, 1989 total expenses fell to a record low of 28.1% of total revenue. While the **net profit** reported by U.S. pharmacies increased slightly (from 3.0% in 1988 to 3.1% in 1989), the actual net profit before taxes increased by only $1,642 from 1988. Managers may attempt to maintain profit in light of a declining gross margin percent by: raising prices when competition allows, eliminating unfavorable third party plans, reevaluating purchase practices, decreasing total expenditures, and/or reexamining theft deterrents. Net profit before taxes reported by N.C. pharmacies soared above the national average at 3.9%, up from 2.4% the previous year. This increase in net profit before taxes for N.C. pharmacies represents a $13,770 gain over 1988. Net profit before taxes for pharmacies in the South Atlantic region hovered at 3.4%, a $2,325 gain.

Although **total expenses** as a percent of sales decreased in 1989, expenses increased dollarwise ($8,694/4% for the U.S.; $3,997/1.9% for the South Atlantic states; $10,218/4.4% for N.C.).

In the U.S., the average **proprietor's salary** as a percent of sales stayed the same, but increased $2,590 or 5.7% over the previous year. Throughout the South Atlantic states, (and N.C.), the average proprietor's salary as a percent of sales decreased from 6.5% to 6.1% (6.0% to 5.7%, N.C.), representing a salary decrease of $279 ($14, N.C.).

The increase in net profit dollars and in the salary drawn by the owner resulted in a new high for **total proprietor's income** in the U.S. of $73,017. The South Atlantic states as a whole reported a lower total proprietor's income of $72,364. North Carolina reported the highest at $83,654.

Although total **inventory** dollars increased for U.S. pharmacies, inventory expressed as a percent of sales declined. Total inventory dollars and inventory as a percent of sales decreased in the South Atlantic and N.C. pharmacies. U.S. and N.C. pharmacies reported that prescription inventory cost over $5,000 more during 1989. Merchandise inventory (excluding prescription items) for the U.S. was lower in dollars of inventory, but percent

Continued on page 20

Table 2. Current Trends in Pharmacy Operations in the South Atlantic Region, 1988-1989**

Averages Per Pharmacy	1989 (212 pharmacies)	1988 (256 pharmacies)	Amount and Percent of Change
SALES			
Prescription	$561,712— 73.8%	$513,413— 70.6%	+ 48,299—9.4%
Other	199,752— 26.2%	213,379— 29.4%	- 13,627—6.4%
Total Sales	$761,471— 100.0%	$726,792—100.0%	+ 34,679—4.8%
COST OF GOODS SOLD	523,916— 68.8%	495,559— 68.2%	+ 28,357—5.7%
GROSS MARGIN	$237,555— 31.2%	$231,233—31.8%	+ 6,322—2.8%
EXPENSES			
Proprietor's or Manager's salary	$46,677— 6.1%	$46,956— 6.5%	- 279—0.6%
Employees' wages	69,698— 9.2%	68,994— 9.5%	+ 704—1.0%
Rent	16,409— 2.2%	17,305— 2.4%	- 896—5.2%
Miscellaneous Operating Expenses	79,084— 10.3%	74,616— 10.2%	+ 4,468—6.0%
Total Expenses	$211,868— 27.8%	$207,871— 28.6%	+ 3,997—1.9%
NET PROFIT (before taxes)	$25,687— 3.4%	$23,362— 3.2%	+ 2,325—10%
Add proprietor's withdrawal	46,667— 6.1%	46,956— 6.5%	- 279—0.6%
TOTAL PROPRIETORS INCOME	$72,364— 9.5%	$70,318— 9.7%	+ 2,046—2.9%
VALUE OF INVENTORY AT COST AND AS A PERCENT OF SALES			
Prescription	$59,864— 10.7%	$58,429— 11.4%	+ 1,435—2.5%
Other	33,335— 16.7%	36,657— 17.2%	- 3,322—9.1%
Total Inventory	$93,199—12.2%	$95,086— 13.1%	- 1,887—2.0%
ANNUAL RATE OF TURNOVER OF INVENTORY	5.8 times	5.3 times	
FLOOR AREA*	2,657 sq. ft	2,860 sq. ft.	- 203—7.1%
Sales Per Square Foot*	$286.59	$252.62	+ 33.97—13.4%
Rent Per Square Foot*	$6.18	$6.05	+ 0.13—2.1%
NUMBER OF PRESCRIPTIONS DISPENSED			
New	15,311— 51.3%	16,850— 54.3%	- 1,539—9.1%
Renewed	14,563— 48.7%	14,162— 45.7%	+ 401—2.8%
Total Prescriptions	29,874— 100.0%	31,021— 100.0%	- 1,147—3.7%
PRESCRIPTION CHARGE	$18.80	$16.56	+ 2.24—13.5%
NUMBER OF HOURS PER WEEK			
Pharmacy was open	58 hours	60 hours	- 2
Worked by proprietor	51 hours	56 hours	- 5
Worked by employed pharmacist(s)	25 hours	26 hours	- 1
PERCENT OF TOTAL PRESCRIPTIONS COVERED BY:			
Medicaid	14.0%	16.3%	
Other third party	18.7%	18.4%	

* Based on averages of pharmacies that reported all data.
** *Source: 1990 Lilly Digest.*

Table 3. Current Trends in Pharmacy Operations in North Carolina, 1988-1989**

Averages Per Pharmacy	1989 (47 pharmacies)	1988 (59 pharmacies)	Amount and Percent of Change
SALES			
Prescription	$635,576— 73.3%	$567,826— 68.5%	+ 67,750—11.9%
Other	231,752— 26.7%	261,183— 31.5%	- 29,431—11.3%
Total Sales	$867,328—100.0%	$829,009—100.0%	+ 38,319—4.6%
COST OF GOODS SOLD	588,734— 67.9%	574,403—69.3%	+14,331—2.5%
GROSS MARGIN	$278,594—32.1%	$254,606— 30.7%	+ 23,988—9.4%
EXPENSES			
Proprietor's or Manager's salary	$49,724— 5.7%	$49,738— 6.0%	- 14—0.03%
Employees' wages	89,638— 10.3%	84,218— 10.2%	+ 5,420—6.4%
Rent	18,924— 2.2%	18,953— 2.3%	- 29—0.1%
Miscellaneous Operating Expenses	86,378— 10.0%	81,537— 9.8%	+ 4,841—5.9%
Total Expenses	$244,664— 28.2%	$234,446— 28.3%	+ 10,218—4.4%
NET PROFIT (before taxes)	$33,930— 3.9%	$20,160— 2.4%	+ 13,770—68.3%
Add proprietor's withdrawal	49,724— 5.7%	49,738— 6.0%	- 14—0.03%
TOTAL PROPRIETORS INCOME	$83,654— 9.6%	$69,898— 8.4%	+ 13,756—19.7%
VALUE OF INVENTORY AT COST AND AS A PERCENT OF SALES			
Prescription	$64,836— 10.2%	$73,371— 12.9%	- 8,535—11.6%
Other	38,224— 16.5%	36,513— 14.0%	+ 1,711—4.7%
Total Inventory	$103,060— 11.9%	$109,884— 13.3%	- 6,824—6.2%
ANNUAL RATE OF TURNOVER OF INVENTORY	6.0 times	5.3 times	
FLOOR AREA*	3,195 sq. ft.	3,223 sq. ft.	- 28—0.9%
Sales Per Square Foot*	$271.46	$256.36	+ 15.10—5.9%
Rent Per Square Foot*	$5.92	$5.88	+ 0.04—0.7%
NUMBER OF PRESCRIPTIONS DISPENSED			
New	16,502— 48.3%	17,599— 50.7%	- 1.097—6.2%
Renewed	17,694— 51.7%	17,090— 49.3%	+ 604—3.5%
Total Prescriptions	34,196— 100.0%	34,689—100.0%	- 493—1.4%
PRESCRIPTION CHARGE	$18.59	$16.37	+ 2.22—13.6%
NUMBER OF HOURS PER WEEK			
Pharmacy was open	59 hours	63 hours	- 4
Worked by proprietor	56 hours	66 hours	- 10
Worked by employed pharmacist(s)	25 hours	22 hours	+ 3
PERCENT OF TOTAL PRESCRIPTIONS COVERED BY:			
Medicaid	13.7%	14.4%	
Other third party	9.3%	9.0%	

* Based on averages of pharmacies that reported all data.
** *Source: 1990 Lilly Digest.*

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PARTICIPATIVE MANAGEMENT APPROACHES FOR A HEALTH SERVICE ORGANIZATION

This is the sixteenth in a series of articles for professionals who manage, and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Recently we were working with a large health service organization which included a substantial internal service factory with over 100 employees. Most of the parent organization's employees were clerical, customer service, or computer services staff. Our task was to involve workers in the service factory in a participative planning process that could improve morale and help get the productivity back up to earlier levels, as well as improve the planning process.

There had been many complaints and survey results indicating employee perceptions that management didn't care about the workers, that there was inadequate training, and that their jobs were dead-end jobs. In a sense, the employees were right about the dead-end nature of their jobs. Few of these people could ever move on to be pharmacists or doctors or nurses or into most jobs available in the organization as a whole. There had also been much pain in the organization about promotions and pay raises that people thought were due them, but never were approved by the larger bureaucratic system.

So the first thing we needed to avoid was raising people's expectations. We did not want to set them up for any more falls. Furthermore, while opportunities for advancement were few and far between, turnover was low and there were few jobs elsewhere in the organization for people with these skills.

Quality as a Route to Productivity

We decided to focus the participative effort on the planning process of the organization, especially improvement in the quality of service offered. Many health professionals might wonder why we focused on quality of service when productivity was the issue at hand. Many professionals believe that quality and productivity are antithetical. This comes from experiencing the quality problems that understaffing can generate. But most of the time "Thoughtful managers responsible for service operations agree (that)... service quality and productivity vary directly with each other. Quality is not achieved at the cost of lost productivity; productivity gains need not affect quality adversely."[1] Because many people still believe otherwise, it sometimes pays to approach the productivity issue obliquely and concentrate on quality issues. Wanting to give better service has a

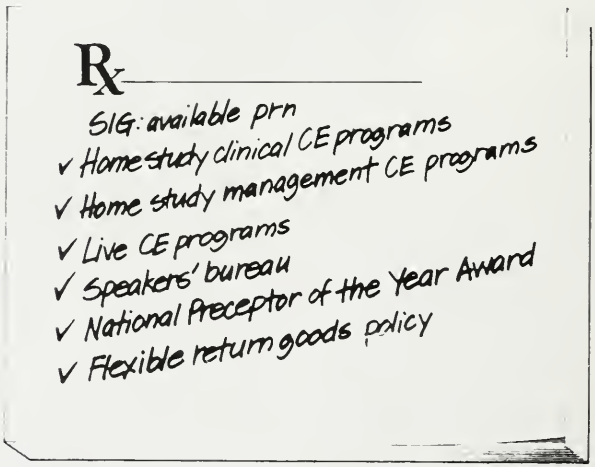
CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

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Figure 1
Comparison of Two Participative Approaches

Group Attribute	Quality Circle	TQM
Composition	7-10 people	As many as have useful information
Membership	Voluntary	Voluntary and assigned
Origin of Topics	Group	Management or the group
Timing	During working hours	During working hours
Primary Concern	Quality, but also safety methods, communication and problem solving	Identified performance gap
Issues Ownership	Within work group (intradepartmental)	Usually across work groups (interdepartmental)
Facilitator Needed	At first	For training only
First-line Supervisory Role	Usually excluded	Not specifically excluded
Life Cycle	As long as the group perceives topics useful	As long as it takes to solve the problem
Management Response	At proposed solution	At proposed solution; monitor progress

higher motivational appeal to it for most people. People could identify a performance gap in a service standard and then go do something about it. That could be a positive experience.

Participative Approaches

There are two generic models for group participation in improving work processes: 1) quality circles, and 2) total quality management (TQM) groups. Figure 1 compares the two approaches, although, as we will see later, many variations are possible. Quality circles have as their focus quality, but are open to a wide variety of issues that affect the work place. TQM develops ad hoc groups that are motivated by a perceived performance gap and come together to deal with that gap and then go out of business once the problem has been solved. The perception of the gap may be generated by the participants, by customers or by management. In quality circles, the group works on issues that are of interest to the group, and management has little say in terms of what is chosen, except to specify what is off limits, like wages, salaries and benefits.

Sometimes quality circles in service organizations can become gripe sessions, if the group fails to address a quality issue. There are enough sources of irritation in the service arena that it is always possible to note how management is insensitive and

how other groups are not doing their jobs which keeps the work environment from improving.

We have written elsewhere that the TQM approach is very useful in establishing joint ownership of a process that cuts across multiple departments, often the case in health care. This is why literature emphasizes the interdisciplinary nature of the effort.[2] In the case cited above, however, the work group needed a common set of internal objectives and some experience with autonomy, before they could take on interdepartmental process issues. It was also evident that a facilitator was needed at this point to keep people from laying the blame on management, on other departments or on their colleagues.

We decided to take a TQM view, but within the work group. We decided that the ad hoc task was planning — focusing on any performance gaps that a planning group generated. As motivation increased, then the other ad hoc groups could bring in other parts of the organization where necessary. This left the activity as voluntary at the start, but still gave the groups or management the explicit responsibility to involve other groups as issues arose. The planning task is, of course, one that must be repeated periodically so that individuals could continue to develop their group skills, but not meet all the time and exhaust their enthusiasm. Furthermore, management still had the prerogative of approaching them with any quality issues it deemed important. If we had used an approach with a more passive management role, the workers could say that management was ignoring them again.

With this approach, management would still have to be very responsive to the issues the employees raised. The parent organization had already tried quality circles, but they failed due to management's very slow response to the ideas raised by the employees, especially those that required some capital investments. Choosing the planning issue, avoids the management's obligation to spend money in the short run to show its willingness to respond. This is something we wanted to avoid during a very tight financial period. We also did not want to close out interactions with other groups in the planning process, which a straight quality circle approach might have done.

Conclusion

Think about groups in your organization that need revitalization. Then consider the attributes of group processes such as those outlined in Figure 1. Don't be trapped into picking one generic form or the other. Pick the one that best fits your situation, as we did. Then modify it to meet your situation. Would it make sense to work within groups or across them? Which fits your situation best — to use a planning focus, or a quality one or a productivity one? You have to make that choice. Decide whether the group is likely to take off on its own, whether it needs a facilitator or whether members need specific technique training. Monitor the results as they progress and be prepared to respond rapidly to group recommendations. Be prepared to be pleasantly surprised by peoples' responsiveness.

References

[1]Heskett JL, Sasser EW and Hart CWL. Service breakthroughs: changing the rules of the game. New York: The Free Press; 1990.

[2]McLaughlin CP and Kaluzny AD. Total quality management in health: making it work. *Health Care Management Review.* 1990; 15(3):7-14. •

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DICKINSON'S PHARMACY

"...Unless patients perceive and value your services, all is lost. There is no future for pharmacy as we know it in the lowest price..."

"Just Say No." I have always wondered why pharmacists don't "just say no" to all those ruinously low contract offers they get from third parties.

And every time I wonder this out loud, pharmacists always educate me, defensively: "My patients would only go across the road/town/river (take your pick) to a pharmacy that will."

But still I always wonder about it. Are these the unalterable facts of pharmacy?

Is that all there is to it?

Lately, it has dawned on me that, yes indeed, that is all there is to it — if that's all there is to the prescription in the first place: its price.

You're like that, yourself, when you're out shopping for a widget. If you think you can buy a new Magnavox at Crazy Eddy's for $399 when it would cost $599 at Bloomie's, you'd be mad to go to Bloomie's, wouldn't you?

Pharmacists who think they can't "just say no" seem to have given up. They don't think they can stop their patients from going to AARP or Medco or Skinflint Drugs (pharmacy equivalent of Crazy Eddy).

Critiquing not-so-wonderful mail-order pharmacy prices, especially those charged by Retired Persons Services, *Personal Finance* magazine recently reported: "The AARP prescription drug program can be valuable for shut-ins or those in small towns where prescription prices are high. But more mobile seniors in larger towns can usually get lower prices elsewhere."

That's what *Personal Finance* thinks mobile seniors are shopping for: prices, not prescription drug care.

But *Personal Finance* is wrong. And so is anyone else who thinks that price is the uppermost consideration in the minds of most people who have a prescription they need filled.

Price may be the uppermost consideration in a benefits manager's mind when he or she thinks about *somebody else's* prescription.

Magazine writers, consultants, advisors, radio and TV commentators, and all others who have pretensions about their right to speak for *other people's prescriptions* talk about price because it's the only thing about prescriptions they think they might understand.

And with so many of these part-time interveners in the physician-pharmacist-patient relationship talking about price to the exclusion of anything else, a warped picture is being seen.

As much as progressively minded pharmacists tell each other that pharmacy is more than price, the customer continues with depressing frequency to see price as the whole ball game, because that's all anybody writes or talks about in the media.

It's time for the real, hands-on, experts to straighten this warped picture out. Instead of playing into the manipulators' price-obsessed game, physicians, pharmacists and patients need to start talking to each other about health care.

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy—The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

They need to solidify their relationships.

The next time Mrs. Jones tells you her prescription plan is mandating mail-order for her maintenance drugs, work with her to help her say "No." Perhaps she can bill the plan herself, and pay you later. Perhaps she would be interested in reading your file on mail-order drug dangers (you have kept a file of clippings from the pharmacy literature and other mailings — haven't you?).

Perhaps she and her co-workers at the plant would coordinate efforts to get this mandate reconsidered?

The sad truth is that most pharmacists appear not to have patient relationships that could sustain such efforts. Many are too busy simply being pharmacists to keep their patient networks in good shape.

Instead, they may promote their discount prices, and join the general marketplace clamor that focuses only on price. In doing so, they may convince themselves that they are merely meeting market demands.

This is the language of bigger operators than the average pharmacy. Predatory mail-order corporations that have managed to convert pharmacy and health care to a highly profitable short-term dollars-and-cents operation in which matters of human therapeutics — and long-term cost-effectiveness — are completely irrelevant.

What to do about it? Reach the patient. Even veterinarians are issuing regular pet care newsletters to their potential patients.

Unless patients perceive and value your services, all is lost. There is no future for pharmacy as we know it in the lowest price.

But when patients do perceive and value the pharmacy's services, they can be helped by pharmacists to network among themselves and their employers to defeat any health care program that denies them the right of access to your care.

It's time pharmacists started just saying "No" to the status quo. Write me for newsletter details, and for how to do it (including my kit of anti-mail order clippings). •

LILLY DIGEST 1990

Continued from page 9

of sales inventory increased slightly from the previous year. N.C. was greater on both counts; the South Atlantic was lower.

Merchandise selling space in the average independent community pharmacy decreased 3% to 2,793 sq. ft. (7.1% to 2,657 sq. ft. in the South Atlantic states; 0.9% to 3,195 sq. ft. in N.C.).

The **hours of operation** in the typical *Lilly Digest* pharmacy remained unchanged for 1989 at 60 hours per week. However, N.C. pharmacies decreased their hours from 63 hours in 1988 to 59 hours in 1989; South Atlantic pharmacies decreased their hours from 60 to 58 hours per week.

The **number of prescriptions dispensed** decreased across the board. However, a rise in the average **prescription charge** resulted in increased prescription sales. The average prescription charge in 1989 was $18.37 for the U.S., $18.80 for the South Atlantic, and $18.59 for N.C. The upward trend in the average prescription charge noted over the past several years is often cited as evidence that prescription prices are rising. However, this statistic alone may not support such a conclusion since it is not known if the average number of days of therapy have increased, decreased, or remained the same. The share of **new prescriptions** in the U.S. decreased to 51.9% of total prescriptions from 54% the previous year (54.3% to 51.3%, South Atlantic; 50.7% to 48.3%, N.C.).

Prescription sales per pharmacy hour open were reported to have increased by 10.4% during 1989 to more than $187 in the U.S. and as high as a 19.5% increase to $207 in N.C. Prescriptions dispensed per pharmacy hour open has generally increased during the past decade, partly as a result of a decrease in hours open per week.

This report has been adapted from the 1990 *Lilly Digest*. The *Lilly Digest* contains operating information derived from voluntary submissions by community pharmacists throughout the U.S. It presents the averages of reported data. To receive a free copy of the complete *Lilly Digest*, contact your Lilly/Dista/Select Products representative or contact the Eli Lilly Co. directly at (317) 276-6009. •

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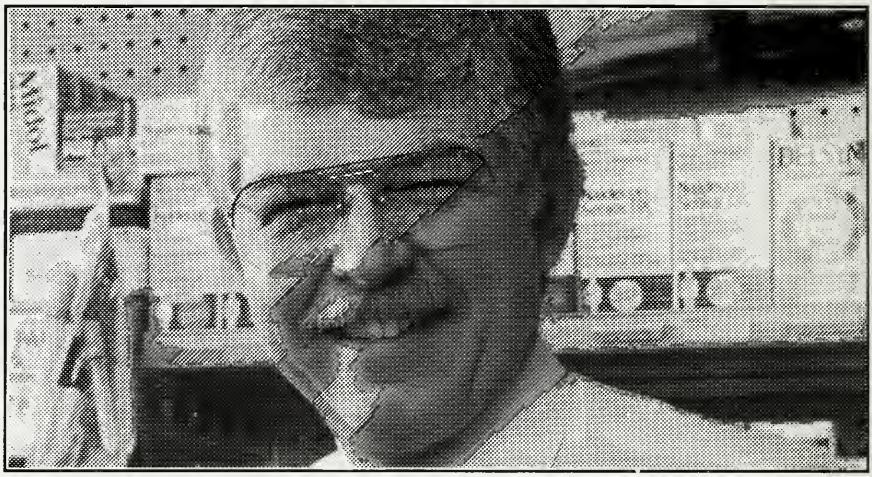
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RECORD YEAR FOR NABP PHARMACIST LICENSURE TRANSFERS

North Carolina Ranks Third

For the second year in a row, the National Association of Boards of Pharmacy (NABP) surpassed its previous activity record by processing a record-breaking 4,612 applications. This year's total outdistanced last year's record of 4,431 by 181 applications.

Falling from its first place position in 1989, North Carolina took third place in the number of registered pharmacists transferring their licenses into the state in 1990. A total of 210 pharmacists transferred into the state while only 89 transferred out. Maryland led the nation with 221 registered pharmacists transferring their licenses into the state followed by New Jersey with 210. This year's biggest loser was once again New York with 334 pharmacists leaving to practice elsewhere.

Trends in licensure transfer seem to correspond with society's general mobility trends—movement from the Midwest to the warmer climates of the Southwest and Southeast. In 1990, North Carolina experienced a 70% gain in pharmacists over the previous year.

Source: NABP Newsletter. 1991; 20(March).•

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We are pleased that Searle has been the new sponsor of our Continuing Education for Pharmacists articles since the first of this year. These articles are published in state pharmacy journals around the country so that thousands of pharmacists can benefit from quality correspondence pharmaceutical education. We thank Searle for their support.

Goals

The goals of this lesson are to identify and discuss new drugs approved by FDA and/or marketed during late 1989 and 1990.

Objectives

At the conclusion of this lesson, successful participants should be able to:

1. exhibit knowledge of the drugs discussed by pharmacologic and therapeutic classification;
2. choose the indications, mechanism of action, benefits and limitations of the drugs discussed;
3. identify adverse effects and drug interactions associated with the drugs; and
4. demonstrate an ability to counsel patients on these new drugs.

Antiarrhythmics

A brief explanation is in order to prevent confusion between the FDA rating system ("1C"), and the antiarrhythmic classification ("IC"). The former system was explained in part I of this series, and refers to the chemical nature and potential therapeutic impact of a drug. The antiarrhythmic classification (Table 1) defines its pharmacodynamic actions on the heart.

Indecainide (1C; Decabid)

This drug is similar therapeutically to other IC antiarrhythmics: encainide (Enkaid), flecainide (Tambocor) and propafenone (Rythmol).

Although their exact mechanism is unknown, IC antiarrhythmics block passage of sodium across myocardial cell membranes. This reduces muscular contractions with the net result that IC antiarrhythmics suppress premature ventricular contraction complexes (PVCs) and depress conduction of impulses between myocardial cells. They significantly increase intraventricular refractoriness. They do not affect cardiac output or blood pressure.

Indecainide is as effective as other IC antiarrhythmics for treating life-threatening

Table 1
Antiarrhythmic Drug Classification*

Group 1A:	Disopyramide, Procainamide, Quinidine
Group 1B:	Lidocaine, Mexiletine, Phenytoin, Tocainide
Group 1C:	Encainide, Flecainide, Indecainide, Propafenone
Group II:	Beta-adrenergic blockers
Group III:	Amiodarone, Bretylium
Group IV:	Calcium channel blockers

*Moricizine and adenosine are not classified.

ventricular arrhythmias. The recommended dosage is 100 to 200 mg per day. At press-time, Decabid was not marketed.

Propafenone (1C; Rythmol)

Like indecainide, propafenone is a sodium-channel blocker, with structural similarities to other IC antiarrhythmic drugs and also propranolol. The drug increases the PR and QRS interval on EKG readings, actions characteristic of IC agents. It also prolongs refractoriness in the atria and ventricles, but to a lesser extent. Propafenone exerts slight (1/50th) beta-adrenergic blocking action similar to low doses of propranolol, but whether this action helps suppress the proarrhythmic effect is not certain. "Proarrhythmic" means that, since the drug alters ionic transport across myocardial fibers, it can actually cause arrhythmias.

Propafenone is indicated for treatment of documented, life-threatening ventricular arrhythmias, such as sustained ventricular tachycardia. This restrictive indication came about when, early in 1989, two other IC antiarrhythmics (encainide and flecainide) were shown to have mortality rates approximately 2.5 times greater than placebo in post-myocardial infarction patients with asymptomatic or mildly symptomatic arrhythmias. In that study (the Cardiac Arrhythmia Suppression Trial - CAST) mortality with encainide or flecainide was 56/730, versus 22/725 for placebo. There is no evidence that indecainide or propafenone have similar toxicity. Nonetheless, they are required to contain the same restrictive labeling.

Adverse effects are mild. Most common are dizziness, nausea and vomiting, unusual taste, constipation and fatigue.

The dose should be titrated upward beginning with 150 mg every 8 hours increasing to 300 mg every 8 hours if needed. Rythmol is available in 150 and 300 mg scored tablets.

Moricizine (1B; Ethmozine)

Structurally related to the phenothiazines, moricizine is used for treatment of documented life-threatening ventricular arrhythmias, such as sustained ventricular tachycardia. It is a Class I antiarrhythmic with properties of IA, IB and IC drugs. Moricizine is the only recently-approved antiarrhythmic to receive a "1B" FDA classification, denoting a new chemical entity with modest therapeutic gain over existing therapies. Moricizine may be advantageous in that it is effective in patients with poor cardiac function. Many Class I drugs worsen heart function and promote heart failure.

Moricizine has a safety record that clearly distinguishes it from other antiarrhythmics. It is less proarrhythmic than other Class I drugs. The most common adverse effects involve the CNS, including lightheadedness, dizziness, numbness and headache.

Moricizine is dosed at 200 to 300 mg every 8 hours initially, titrated upward to the patient's maximal dose. Ethmozine is available in 200, 250 and 300 mg tablets.

One point of interest is that moricizine is the first Soviet drug to be licensed in the U.S. Of further interest is that moricizine is the only antiarrhythmic drug in the CAST study which was not discontinued, since there was no evidence of drug-induced death resulting from its use.

Adenosine (1B; Adenocard)

This antiarrhythmic drug is indicated for treatment of paroxysmal supraventricular tachycardia (PSVT). This is a non-threatening

arrhythmia characterized by rapid onset of heart rate of 150 to 250 beats per minute. It slows conduction and interrupts re-entry pathways through the AV node.

Adenosine's antiarrhythmic effects appear to be due to increase in potassium conductance across cellular membranes, depression of calcium-mediated slow channel conduction and possibly, antagonism of catecholamine-mediated effects. Adenosine blocks the AV node which is thought to terminate supraventricular tachyarrhythmias and restore normal sinus rhythm. It's half-life is 10 seconds.

Adverse reactions include facial flushing, shortness of breath, headache, lightheadedness and pressure in the chest. Bronchoconstriction may be felt in some asthmatics. Overall, adenosine is remarkably safe, probably due to its short half-life and fact that it is a nucleoside normally present in the body. It is involved in many physiologic processes, including regulation of coronary and systemic vascular tone, intracardiac conduction, lipolysis in fat cells and platelet function.

The dose is 6 mg initially as a rapid IV bolus. If the first dose does not relieve tachycardia within 1 to 2 minutes, a 12 mg dose can be given also as a rapid IV bolus. This dosage can be repeated a second time if required. Adenocard is available in 6 mg/2 ml vials. It should not be refrigerated since the solution may crystallize.

Other Cardiovascular Drugs

Anistreplase (Eminase)

This thrombolytic (blood clot dissolving) agent is indicated in the management of acute myocardial infarction (MI) in adults, for the lysis of thrombi obstructing coronary arteries, reduction of infarct size, improvement of ventricular function following acute MI, and reduction of mortality associated with acute MI. Results of the AIMS (Anistreplase Intervention Mortality Study) investigation of 1,258 patients showed that mortality at 30 days post-infarction was decreased 47.2 percent over placebo.

Anistreplase reportedly has several advantages over other thrombolytics such as streptokinase (Streptase) and alteplase recombinant (Activase). The new drug is injected over 2 to 5 minutes, versus one hour for streptokinase and three hours for alteplase recombinant. This means that Eminase can be administered prior to, or during transport to an emergency, care center, rather than after arrival. Drug action continues as long as 4 to 5 hours after the initial injection.

Intracerebral bleeding is the adverse reaction of greatest concern, occurring in approximately 0.5 percent of patients. This is within the range of other thrombolytic agents. Both streptokinase and alteplase recombinant have values in the 0.4 percent range.

Anistreplase, also called APSAC for anisoylated plasminogen streptokinase activator complex, is administered in a dose of 30 units either directly into the vein, or diluted in an IV infusion. Eminase vials contain 30 units of anistreplase as a lyophilized powder.

Betaxolol (3C; Kerlone)

Reports substantiate that betaxolol is effective for treatment of hypertension. Advertisements stress its long half-life, thus reducing the chance for potential loss of therapeutic control by missing a dose.

Serious adverse reactions are uncommon. As with all beta-adrenergic blockers, bradycardia, hypotension, heart failure, and atrioventricular block can occur. Fatigue and CNS depression have been reported. Special caution must be taken when giving any beta-adrenergic blocker to patients with heart failure or insulin-dependent diabetes.

The dose is 10 mg once daily and can be increased to 20 mg daily. Kerlone is available as 10 and 20 mg tablets.

Perfluorochemical Emulsion (Fluosol)

Perfluorochemical emulsion is a stable emulsion of perfluorochemicals 20 percent in water. The perfluorochemical phase of the emulsion dissolves oxygen and carbon dioxide. When the oxygenated drug is perfused transluminally through a coronary angioplasty balloon catheter, it provides oxygen to the myocardial tissue distal to the point of balloon inflation. Repeated dosing leads to accumulation; therefore, Fluosol must not be administered more than once every 6 months.

The product is available in a 20 percent solution to be mixed to a volume of 400 mL. It is stored frozen, and warmed to 37° C prior to administration.

Pinacidil (1C; Pindac)

An arterial vasodilator, pinacidil is effective in the treatment of mild to moderate hypertension. Pinacidil is at least as effective as hydralazine, and can be used alone or in combination with a diuretic and/or beta-adrenergic blocker. Use with a diuretic is consistent with good therapeutics, since edema is reported in some persons who take the drug alone.

The drug acts primarily on arterials by direct vasodilation. At the time of writing this article, the drug had not been marketed. It appears to offer little advantage over currently available antihypertensives.

Epoetin Alfa (Epogen)

Epoetin, also referred to as recombinant human erythropoietin, EPO and rHuEPO, is a product of recombinant DNA technology. It is chemically and biologically equivalent to endogenous erythropoietin. EPO stimulates bone marrow to produce erythrocytes (red blood cells). A small amount of EPO is produced in the liver, but the bulk is synthesized and secreted by cells in the cortex and medulla of the kidney.

Human erythropoietin binds to erythroid progenitor cells in bone marrow to stimulate their differentiation into mature erythrocytes, along with other activities including increasing and maintaining erythroid progenitor cells in the proliferating pool. Its production is increased during periods of renal hypoxia caused by anemia.

There are several potential indications for recombinant EPO. The first to be approved (for epoetin alfa) is anemia associated with chronic renal failure. These patients cannot produce enough erythropoietin in their kidneys because of excessive cellular damage. Other potential indications include anemia in AIDS patients, persons undergoing chemotherapy, rheumatoid arthritis, surgical blood loss, and renal transplants. It may also be used to increase the erythrocyte count in patients donating blood for possible use during their own surgery.

Since it is a naturally occurring hormone, there are few side effects. The most common is a rise in blood pressure. This is to be expected since more formed components are being added to the blood, raising its volume. Because most patients being treated already have hypertension, they should be closely monitored during initiation of therapy. Other reported adverse effects include seizures, flu-like symptoms and increased blood clotting.

Epoetin alfa is administered intravenously or subcutaneously to patients not on dialysis, or into the venous line at the end of a procedure for those receiving dialysis. The dosage regimen is based on the patient's hematocrit values, but the recommended starting dose is 50 to 100 units/kg three times a week. Epogen is available in vials containing 2000, 4000 and 10,000 units per 1 mL. The solution should *not* be shaken vigorously since the drug is a glycoprotein which may be denatured and rendered biologically inactive.

Other Miscellaneous New Drugs

Omeprazole (1B; Prilosec)

This is the first in a series of potent gastric acid secretion inhibitors which may eventually be marketed in the U.S. Its action exceeds that of histamine (H-2) antagonists because it acts at the final step of parietal cell secretion of acid. These cells are stimulated by a number of endogenously produced chemicals including acetylcholine, gastrin, prostaglandins and histamine. The H-2 antagonists block stimulation of acid secretion by histamine, but the other substances can still cause acid release.

The final, common step in the mechanism by which parietal cells release HCl into the stomach involves the enzyme hydrogen-potassium adenosine triphosphatase which fuels the proton pump. The net result is an exchange of hydrogen ions for potassium and secretion of acid. Omeprazole inhibits this enzyme, and is thus described as an "acid proton pump inhibitor."

Omeprazole is rapidly degraded by low pH so it would not be effective in a regular dosage form. Instead, the drug is formulated in a delayed-release capsule that contains enteric coated granules. Patients should swallow the capsule whole on an empty stomach, preferably with a full glass of fluid.

Once the drug reaches the small intestine, it is absorbed. However, it is not active until it reaches a slightly acidic medium. Its target tissue, parietal cells, are the only cells in the body with a low pH. Therefore, omeprazole

has affinity for the concentrates within them. There, omeprazole is converted to its active species and inhibits the proton pump.

When released, omeprazole was indicated only for short-term treatment (4 to 8 weeks) of gastroesophageal reflux disease (GERD), short-term treatment of symptomatic gastroesophageal reflux disease partly responsive to customary medical treatment, and long-term treatment of Zollinger-Ellison syndrome. Since then, the FDA has extended its indications to treatment of acute duodenal ulcers and refractory duodenal ulcers (after H-2 receptor antagonists have been tried unsuccessfully).

A dramatic problem that occurred with the drug after its release under the trade name of Losec was that some pharmacists mistook it for Lasix and misfilled prescriptions. Compounding the problem was that both drugs were marketed in 20 mg dosage forms. Its manufacturer sent a "Dear Pharmacist" letter to warn of the potential problem. The problem continued and in September 1990, the trade name was changed from Losec to Prilosec.

The recommended dosage of omeprazole for most of its indications is 20 mg daily. Prilosec is available as 20 mg delayed release capsules.

Metipranolol (1C; OptiPranolol)

While the exact mechanism of ophthalmic beta-adrenergic blockers has not been elucidated, it is known that they lower intraocular pressure and alleviate glaucoma. Many patients are more likely to comply with beta-adrenergic blocker therapy rather than therapy with cholinergic agents (e.g., pilocarpine) because the former do not affect accommodation and cause less blurred vision. They appear to lower intraocular pressure by reducing production of aqueous humor and possibly increasing its outflow. The ophthalmic beta-adrenergic blockers have become agents of choice for treating open-angle glaucoma.

Although rare, optically administered beta-blockers can enter the general circulation through the lacrimal duct and cause systemic effects. This can be lessened if the patient holds a finger on and presses inward at the juncture of the upper nose and lower eyelid for a minute after administering the drops.

Side effects that have been reported include eye discomfort, blepharitis, conjunctivitis, photophobia and rarely, blurred or abnormal vision.

Botulinum Toxin (Oculinum)

This agent was approved as an orphan drug to treat adults with blepharospasm (a rare, debilitating disorder of the eye in which muscles contract, forcing the eyelid closed), and strabismus (the eye deviates away from its normal position). Botulinum toxin induces paralysis of eyelid muscles by blocking release of acetylcholine at neuromuscular junctions. It is injected subcutaneously around the eye. One treatment typically lasts up to three months and must then be repeated.

Side effects are transitory including blurred vision, irritation, and drooping of the upper eyelid. Serious reactions are rare, but may include disorientation and changes in eye alignment.

Levamisole (1A; Ergamisol)

This drug is used in combination with 5-fluorouracil (5-FU) as adjunct treatment to surgery for patients with Dukes' C stage colon cancer. This is a condition in which cancer has spread to local lymph nodes, but there is no detectable spread to other distant sites or organs. Approximately 20 percent of patients with colon cancer are candidates for the drug.

Additional studies are underway for Dukes' B stage colon cancer and rectal cancer. The drug is given in an attempt to eradicate remaining cancer cells following surgery, and thus prevent spread to other sites.

Levamisole is immunotropic in that it restores inefficient host defense mechanisms. In most animal cancer models, it does not influence growth of the primary tumor. However, it does prolong the remission period after chemotherapy.

Toxicicty includes leukopenia, agranulocytosis, severe skin rashes, fever and GI intolerance, and frequently results in discontinuance of therapy.

Levamisole's treatment regimen is 50 mg orally every 8 hours for 3 consecutive days every 2 weeks, with concomitant doses of 5-FU (450 mg/M^2/day) intravenously for 5 days. The 5-FU treatment continues once a week beginning 28 days after the five-day course. Ergamisol is available as a 50 mg tablet.

Pegadamase (1A; Peg-ADA, Adagen)

This is a new drug for children with severe combined immunodeficiency disease (SCID). SCID is a rare and usually fatal genetic disorder. The drug is aimed at SCID patients with adenosine deaminase-deficiency which affects about one-third of all patients with SCID, a total of about 40 children annually worldwide. The drug replaces the enzyme, but does not prompt the body to produce the enzyme, so it does not cure the condition. Recipients must receive weekly injections for the rest of their lives. It costs approximately $60,000 annually.

Limited side effects have been reported. These include headache and pain at the site of injection.

Colfosceril (Exosurf Pediatric) and **Surfactant TA/Beractant** (Survanta)

These are lung surfactants approved for use in prevention and treatment of the respiratory distress syndrome (RDS) in premature infants. RDS, also called hyaline membrane disease, affects up to 50,000 of the 250,000 infants born prematurely each year in the U.S. It is a leading cause of death and disability among premature infants.

The immature lungs of affected infants are unable to produce the naturally occurring surfactant. This foamy substance normally coats the inside of the lungs and keeps them from collapsing during exhalation.

These two products are chemically different. Exosurf is synthetic; Survanta is derived from minced cow lungs. They are instilled through a tube into the lungs after birth. Infants must be ventilated mechanically while the drug is given.

In studies so far, both surfactants have significantly reduced mortality from RDS. Adverse effects from either drug can be managed if used properly. Apnea is reported in 40 to 70 percent, and pulmonary hemorrhage is increased two-fold with Exosurf. But infants who developed apnea had a greater survival rate and reduced incidence of severe intraventricular hemorrhage in tests with the drug. Two adverse reactions of concern with Survanta are a significant increase in intracranial hemorrhage, and increase in post-treatment sepsis.

The future looks promising for both drugs. Their use for RDS in adults has been studied. RDS occurs more often in adults than in infants — up to 60,000 each year in the U.S. The usual cause is trauma or sepsis.

Recently, three additional drugs were approved, but were not available at press-time. **Olsalazine** (Dipentum) is a form of 5-ASA, indicated for treatment of ulcerative colitis. **Idamycin** (Idarubicin) is indicated for combination therapy in acute myeloid leukemia. **Doxazocine** (Cardura) is an alpha-adrenergic blocking agent for treatment of hypertension.

Diagnostics

Iotrolan (1C; Osmovist)

Iotrolan is indicated in adults for lumbar thoracic, cervical and total columnar myelography, and computerized tomography (CT) of spinal and subarachnoid spaces. It is only administered intrathecally.

Rubidium Rb 82 Generator (1C; Cardiogen-82)

This myocardial perfusion agent is used to distinguish normal from abnormal myocardial tissue in patients with suspected myocardial infarction. •

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SEARLE

CORRESPONDENCE COURSE QUIZ

New Drugs, Part III

1. Which of the following antiarrhythmics is structurally similar to propranolol and exerts mild beta-adrenergic blocking action?
 a. Adenocard
 b. Decabid
 c. Ethmozine
 d. Rythmol

2. When an antiarrhythmic drug has proarrhythmic action, it means the drug:
 a. is indicated for arrhythmias eminating above the AV node.
 b. is indicated for arrhythmias eminating below the AV node.
 c. alters ionic transport across myocardial fibers and can cause arrhythmias.
 d. alters ion transport across both atrial and myocardial fibers and therefore is indicated for all types of arrhythmias.

3. A prescription written for omeprazole 20 mg daily should be filled by dispensing:
 a. Ergamisol.
 b. Kerlone.
 c. Lasix.
 d. Prilosec.

4. The drug classed as a IC antiarrhythmic exerts all of the following effects EXCEPT:
 a. blocking the passage of sodium across myocardial cell membranes.
 b. lowering intraventricular conduction time.
 c. suppressing premature ventricular contractions.
 d. depressing conduction of impulses between myocardial cells.

5. All of the following drugs are classed as IC antiarrhythmics EXCEPT:
 a. Adenocard.
 b. Enkaid.
 c. Rythmol.
 d. Tambocor.

6. Which of the following drugs is unique in that it is the first drug developed in the Soviet Union to be licensed for sale in the U.S.?
 a. Adenocard
 b. Decabid
 c. Ethmozine
 d. Rythmol

7. Which of the following is biologically equivalent to an endogenous peptide that stimulates production of red blood cells?
 a. Adagen
 b. Eminase
 c. Epogen
 d. Fluosol

8. The Cardiac Arrhythmia Suppression Trial study resulted in all of the following EXCEPT:
 a. a higher mortality associated with encainide and flecainide than with placebo.
 b. restriction of the indication of encainide and flecainide to documented life-threatening ventricular arrhythmias.
 c. removal of encainide and flecainide from the market.

9. All of the following statements about moricizine are true EXCEPT:
 a. it is chemically related to phenothiazines.
 b. it is the only newly released antiarrhythmic to receive a "1B" classification from FDA.
 c. it is the antiarrhythmic that was continued in the CAST study when others were discontinued.
 d. it is more proarrhythmic than encainide and flecainide.

10. Which of the following drugs is the same as an endogenously produced nucleoside that regulates many physiologic processes?
 a. Adenocard
 b. Decabid
 c. Ethmozine
 d. Rythmol



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1991

June 9	**NCPhA Executive Committee Meeting, Institute of Pharmacy**
June 18	NC Board of Pharmacy Meeting, Board of Pharmacy
June 24-25	NC Board of Pharmacy Licensure Exam, Holiday Inn Four Seasons, Greensboro
July 15	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
July 16	NC Board of Pharmacy Meeting, Board of Pharmacy
August 20	NC Board of Pharmacy Meeting, Board of Pharmacy
August 29	Campbell University School of Pharmacy Fall Convocation
Sept. 14-15	6th Annual Pharmacy Practice Seminar, Wilmington
Sept. 16	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Sept. 17	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 2-3	NCSHP Fall Seminar, Holiday Inn Four Seasons, Greensboro
Oct. 15	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 20-26	**NC Pharmacy Week/National Pharmacy Week**
Oct. 27-31	NARD Annual Meeting, Baltimore, MD
Nov. 18	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Nov. 19	NC Board of Pharmacy Meeting, Institute of Pharmacy
Dec. 8-12	ASHP Midyear Clinical Meeting, New Orleans, LA

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New Drugs: Part III

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Miscellaneous

FOR LEASE: Recently vacated Eckerd Drug Store; 8519 sq. ft. in Murdock Center. SE corner of Roxboro Rd. and E. Club Blvd., Durham, NC. Traffic counts over 45,000 ADT. Contact Rosamond Property Co.: 919-779-7737.

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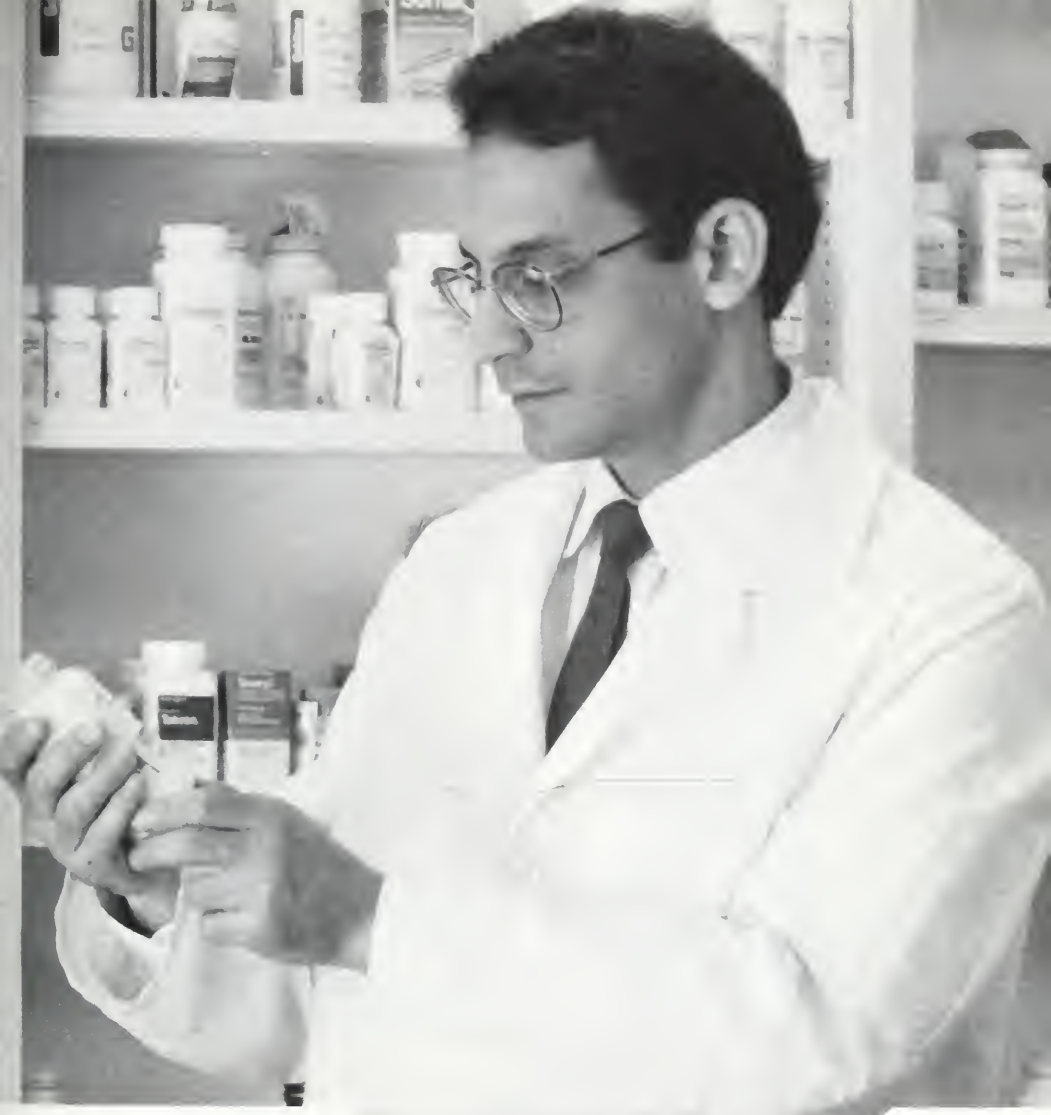
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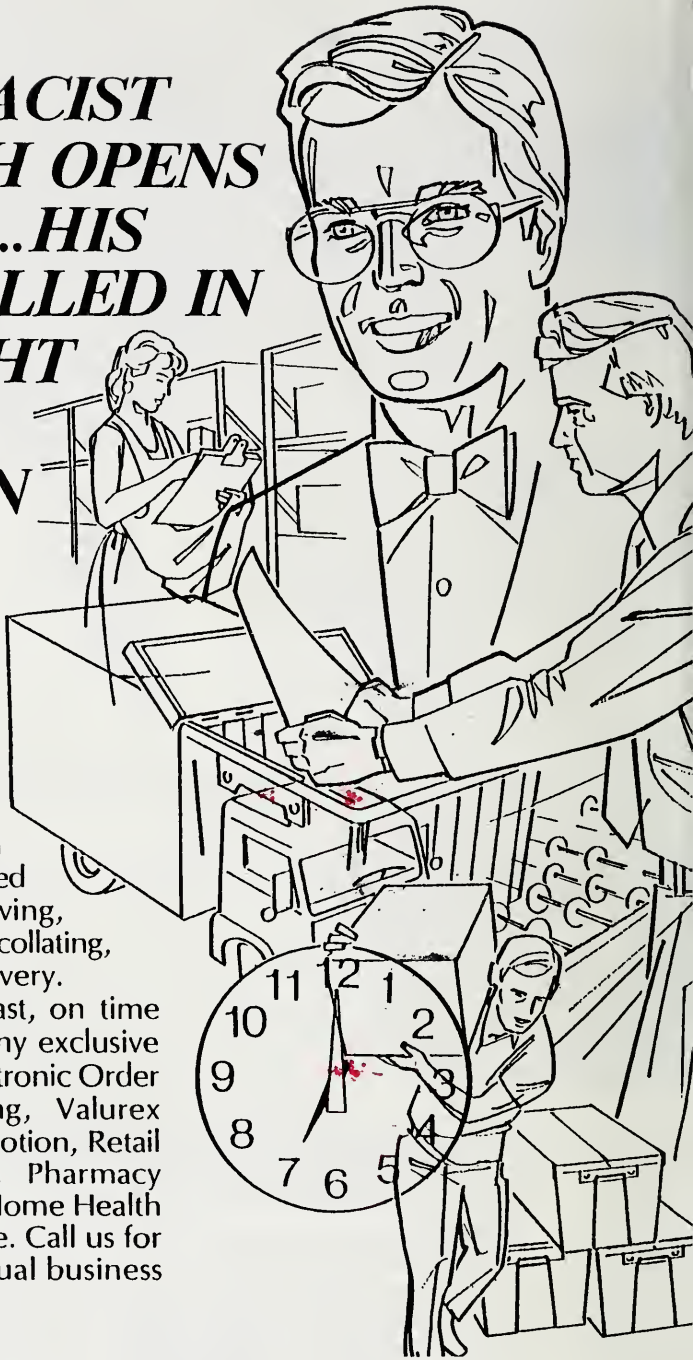
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JUNE 1991 VOLUME 71 NUMBER 6



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First Woman President in the 111-Year History of the NCPhA

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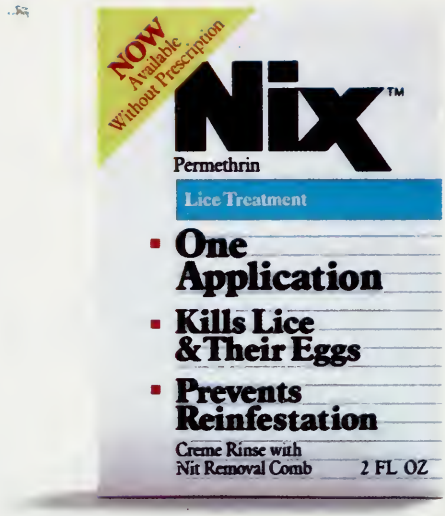
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NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
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PRESIDENT'S PAGE

LET'S UNITE

Betty H. Dennis, NCPhA President

presented at the
NCPhA 111th Annual Convention
Friday, May 24, 1991



It's an honor and privilege to serve as President of this Association. I thank you for all of the encouragement and support you have given me. As your President, I will strive to bring opportunities and challenges to the attention of the Association and develop strategies to meet these challenges. I have to agree with the person who said that their major accomplishments came from carrying out the great ideas of others. We need your ideas. I encourage you to share them.

I would like to pose three challenges to our membership for the coming year. The first is to *unite* behind our newly adopted mission for pharmacy — which is to serve the public as the profession responsible for pharmaceutical care and to achieve optimal therapeutic outcomes. We must accept new and increased responsibilities for patient care. We must work together and support each other to meet these responsibilities.

To unite does not mean that we must always agree. Debate is healthy. We have increasing diversity in our membership and leadership. Our members may have different needs and priorities. We can be united, yet diverse. I believe NCPhA should serve as the Association that represents members from all types of pharmacy practice. The specific needs and goals of members with similar priorities can still be met through the work of our Association's committees and grass roots efforts.

If we unite around a common philosophy of practice, our efforts should be complementary, even if specific activities are focused on different priorities. For the year ahead, I plan to appoint a Strategic Planning Task Force to assist in the development of these priorities and goals for our Association. We need this planning process to position our Association to meet the challenges of the 21st century.

If we unite in our mission we must next communicate that mission effectively to others — to our colleagues in pharmacy and other health care disciplines, our patients, our communities and especially our legislators who must be made aware of the value of our services. We must also increase communication with our members and local associations. I am thrilled to see so many first time attendees and representatives from the local associations attending this convention. We need this network of active members in the local areas.

To communicate effectively means not only to articulate ideas and needs, but to listen to others. It is easy to listen when we like what we hear. The challenge is to listen and communicate when we disagree. Our respect for each other and enhancement of our profession can be increased when we listen and try to un-

Continued on page 18

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The following pharmacists and companies have made contributions and pledges to the 1991 NCPhA Building Fund Campaign since the previous list of contributors was published in the March, 1991 issue of The Carolina Journal of Pharmacy. The Campaign is a fundraising effort to pay off the note for the repairs to the Institute of Pharmacy in Chapel Hill — headquarters for the NCPhA and a meeting place for pharmacy and civic groups. All who contribute $100 or more will be recognized on a permanent plaque in the Institute. You may add to your contributions at any time before the plaque is cast.

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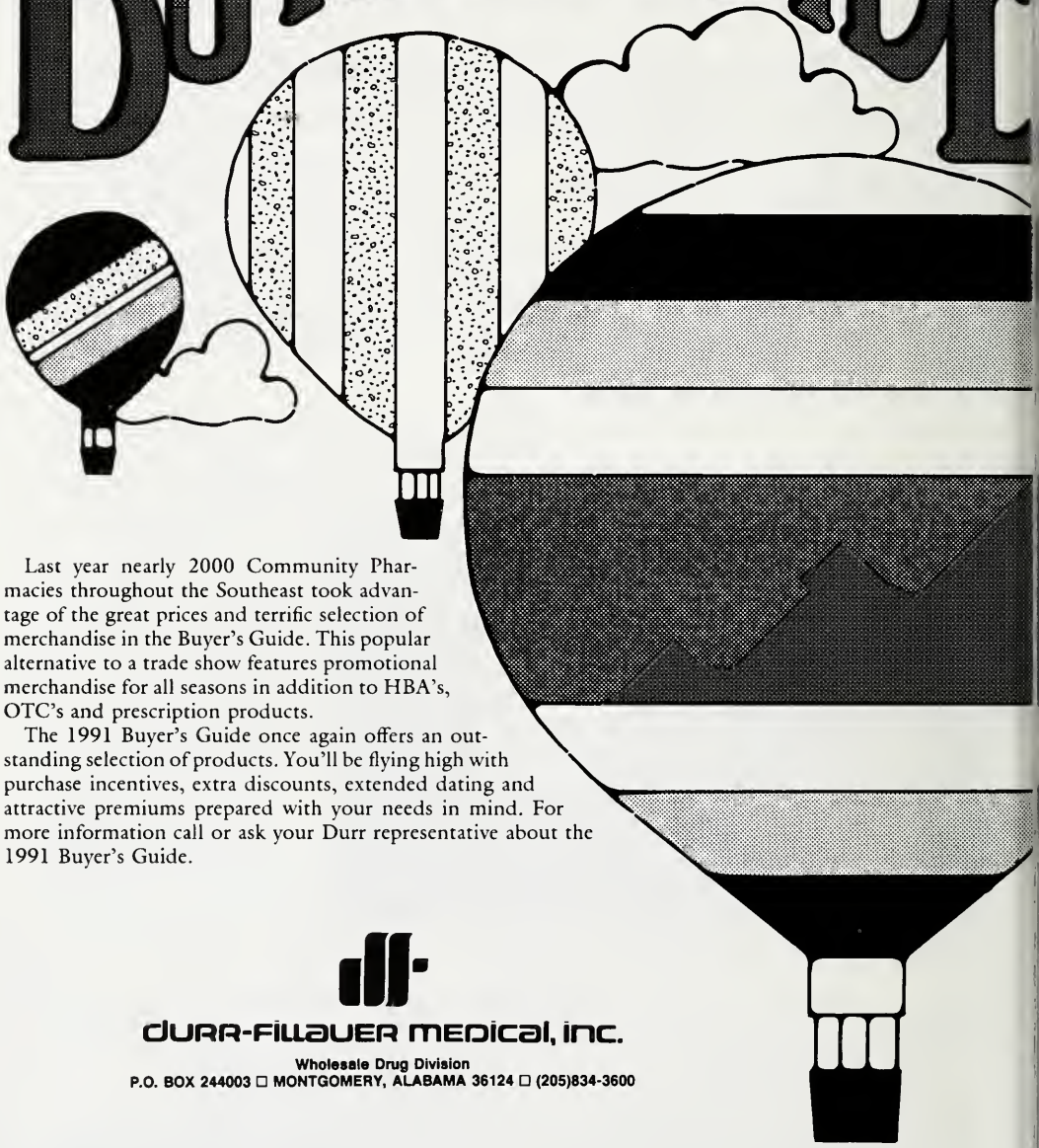
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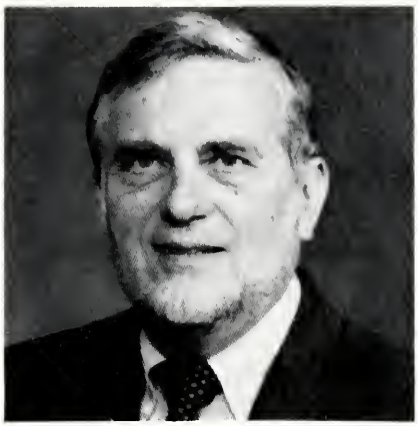
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SIZE AND INVENTORY REQUIREMENTS

A key to pharmacy profitability

This is the seventeenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Managing inventories is one key to pharmacy profitability. This came home to me when one of my colleagues reported that pharmacists in the former East Germany were going from a rigid formulary of about 700 drugs to the 4,700 or so available on the German free market. What a change in the inventory policy! This is especially problematic in a system going from government ownership to private ownership and starved for working capital.

Inventory is very problematic to the pharmacy manager because it represents a costly use of scarce capital and because one's intuition about its behavior is usually quite unreliable. One's intuition is generally reliable when relationships are linear, but inventory relationships are generally nonlinear. Square root signs pop up in most inventory rules.

Inventory requirements tend to change with sales volume. This can be seen in the relationship between pharmacy size and inventory turnover as shown in the 1990 *Lilly Digest* (Table 1).[1]

The same is true of hospitals according to the 1990 *Lilly Hospital Pharmacy Survey* (Table 2).[2] The hospital change in efficiency, often called returns to scale, is consistent with other studies of hospital costs that show a minimum cost in the 200-500 bed range. The reported reason is that a hospital's mix of patients changes with its size. The larger hospitals take on the teaching and research role, the most advanced technologies, and the sickest patients. They need to have more seldom-used items in stock.

Size and Inventory

Being smaller inherently requires more inventory per sales dollar. These findings are not indicators of managerial inefficiency. The trick is to separate out how much of the low stock turn is due to low volume and how much is due to the lack of systems and sophistication. When someone comes in and tries to get you to adopt their inventory system "because Global and Behemoth have both gotten great stock turns," don't take their claims at face value. Adjust the results for your pharmacy operation's size.

Why Inventory?

There are a number of reasons for having inventory. They include:

a. Buying in large enough lots to get quantity discounts.
b. Having enough inventory to take care of variations in customer buying patterns.
c. Having enough to cover for the time it

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

Table 1

1990 Lilly Digest

Pharmacy Size	Stock Turns
By Annual Sales:	
Under $400,000	4.3
400,000-450,000	5.0
450,000-500,000	4.9
500,000-600,000	5.2
600,000-750,000	5.1
750,000-1,000,000	5.4
1,000,000-1,500,000	5.5
Over $1,500,000	5.9
By Daily Prescriptions	
Under 25	3.0
25-50	4.1
50-75	4.5
75-100	5.2
100-150	5.7
150-200	5.9
Over 200	6.5

1990 Lilly Hospital Pharmacy Survey

Bed Capacity	Inventory Turns
Under 50	6.0
50-99	6.5
100-199	7.8
200-399	9.1
400-499	10.2
Over 499	9.5

takes to get a replacement order placed and received.

d. Having enough inventory to take care of uncertainty in delivery lead times for your orders.

All four are inherently related to the size of the business. The larger the sales volume, the less one has trouble meeting discount levels; the more inventory used during the time between order and delivery; and the greater the absolute safety stocks needed to cover items b. and d. The opposite is true for a smaller operation. A smaller firm may also be unable to command as frequent deliveries as the larger one.

Number of Items Carried

One factor that can favor the smaller firm is that it should be able to carry fewer items. It can cater only to the specific needs of its smaller number of customers (including prescribers).

The small pharmacy should be ruthless about culling out the items that do not move. The vendor that comes in and says that you can now get baby powder in two colors instead of one is not doing you a favor at all, unless it substantially increases the total sales of the product (which often doesn't happen). Let's look at an example.

Suppose you normally sell 100 units of that product a week. Then assume that the vendor says "We now have white baby powder and our new lemon yellow product." You stock both and find out that you sell 64 units per week of white and 36 units of yellow. In the past you have had an inventory of 20 units (or two standard deviations of Poisson-distributed demand) in safety stock to cover demand and delivery variability during the

week-long period it takes to get in the next order. Now, having two items, getting the same probability of stockout (called service level), you will need 16 units of white and 12 units of yellow in safety stock — a 40% increase in your safety stock requirement.

The worst case would occur when the new product splits the demand in two and produces no new business. Then, the combined inventory required to give the same probability of a stockout on each item that you once had for the single item calls for a 41.1% increase in your safety stock investment. Your total inventory at the reorder point would be the average demand during lead time, i.e., 100, plus the safety stock. Hence, the increase in reorder point inventory would be from 120 to 128 or 6.7%.

The vendors are not necessarily doing you a favor by coming out with minor variations in their products. The amount of demand increase necessary to offset that inventory cost, assuming a 25% inventory carrying cost and a 30% gross margin, would be 5.55%. It is best not to carry a new item until several of your customers start asking for it. This is especially true of items that are variants of other items you normally carry, such as new flavors of cold remedies.

Inventory Turn Can Be a Fuzzy Measure

That is why large chains are ruthless about the way they allocate shelf space to products. They have come to think of themselves as renters of shelf space in a condominium to the product manufacturers. Instead of square feet of floor space, they think in terms of linear feet of shelf space. The contribution margin on the product times the volume is the rent.

For example, if one row of an item moves 200 units a month, sells for $4.00 and has a 40% margin, the contribution is $320 per month. If someone offers a competing product that sells 250 units per month, sells for $3.00 and has a 30% margin, the contribution is $225 per month. Note that the slower moving item yields the greater monthly profit contribution. In this case, a stock turn is not necessarily a good indicator of profitability. It all depends on the contribution margin, the volume, and the way the customer makes a purchase.

When I have gone into a small chain pharmacy or an independent pharmacy to purchase a cold remedy, I have often been shocked at the small numbers of units in each row and the number of items that are out of stock. Is management assuming that the customer will accept any substitute? The advertisers aren't. Given the margins on these products, I suspect that management is not taking customer service into account adequately.

Is management being lulled into poor service by distributor schemes to "minimize" inventory costs? There are good ways to save on inventory costs and not-so-good ones. Do not get caught up in the supplier rhetoric and end up with shelves with one or two of most things and many empty facings standing out like a mouth with missing teeth. Don't spread your inventory investment out over so many items that you service many of them poorly. That is a mistake the Wal-Mart people seldom, if ever, make.

References

[1]Wolford, AL, ed. Lilly Digest. Indianapolis, IN: Eli Lilly and Company; 1990.

[2]Wolford, AL, ed. Lilly Hospital Pharmacy Survey. Indianapolis, IN: Eli Lilly and Company; 1990. •



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PHARMACY CALENDAR
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July 15	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
July 16	NC Board of Pharmacy Meeting, Board of Pharmacy
August 15	**NCPhA Executive Committee Meeting, Institute of Pharmacy**
August 20	NC Board of Pharmacy Meeting, Board of Pharmacy
August 23	**Pharmacist-of-the-Year Dinner in honor of W. Artemus West, Roseboro**
August 29	Campbell University School of Pharmacy Fall Convocation
Sept. 14-15	6th Annual Pharmacy Practice Seminar, Wilmington
Sept. 16	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Sept. 17	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 2-3	NCSHP Fall Seminar, Holiday Inn Four Seasons, Greensboro
Oct. 15	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 20-26	**NC Pharmacy Week/National Pharmacy Week**
Oct. 27-31	NARD Annual Meeting, Baltimore, MD
Nov. 18NC	Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Nov. 19NC	Board of Pharmacy Meeting, Institute of Pharmacy
Dec. 8-12	ASHP Midyear Clinical Meeting, New Orleans, LA

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FROM THE MAILBAG

NC PSYCHIATRISTS COMMEND PHARMACISTS FOR THEIR VALUABLE SERVICES

April 15, 1991

Mr. Frank Burton, President*
North Carolina Pharmaceutical Association
Burton's Pharmacy
120 East Lindsay Street
Greensboro, NC 27401

Dear Mr. Burton:

Psychiatrists attending a recent meeting of the North Carolina Psychiatric Association discussed triplicate prescription pads. As you know, House Bill 539 was recently introduced recommending the use of such forms in North Carolina.† Our organization will oppose the bill, but this is not the reason I write you.

During the discussion, those attending were in agreement that they had individually experienced an ever increasing vigilance on the part of pharmacists in regard to perceived patient misuse of pharmaceutical products. Each of the ten physicians at the meeting was from a different community and they represented legislative network leaders for the Association. The committee members asked that I write you. I am pleased to do so.

Upon their recommendation to the Executive Council of the North Carolina Psychiatric Association, the Council joins the Committee's desire to acknowledge and commend pharmacists in North Carolina for their educational role in assisting consumers with pharmaceutical product information and known facts about drug interactions. We also wish to commend them for their vigilance and active role in prevention and intervention of misuse of medications. The North Carolina Pharmaceutical Association has been influential through its educational programs, by encouraging pharmacists to be watchful, and by working in coordination with both physicians and patients.

If there is some means to convey our acknowledgment and appreciation of this valuable service provided by the pharmacists in state as indicated above, please do so.

Sincerely,

Richard D. Selman, M.D.
President
North Carolina Psychiatric Association

**At the time this letter was received by the NCPhA office, Frank Burton was president. Since that time, Betty Dennis of Carrboro has been installed as the 1991-1992 NCPhA president.*

†House Bill 539 entitled, "The Use of Triplicate Prescription Pads to Prevent the Illegal Sale of Prescription Drugs," has been defeated. NCPhA was a leader in achieving this victory for North Carolina pharmacy.



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04-08-91

Cynthia MacMillian Crocker
Revco Discount Drug Center
Dabney Dr. S/C, 389 Raleigh Rd.
Henderson, NC 27536

04-15-91

Phillip Thomas Ward
Kerr Drugs
1460 S. Madison St.
Whiteville, NC 28472

James O. F. Moore
Kerr Drugs
200 Berne Square
New Bern, NC 28560

Elizabeth Howell Brown
Peoples Service Drug Store Inc.
909 Washington Square, W. 15th St.
Washington, NC 27889

Thomas Franklin Womble III
Kerr Drugs
1600 Howard Ave.
Tarboro, NC 27886

Steven Craig Evans
Beach Pharmacy of Hatteras
Hwy. 12, P.O. Box 428
Hatteras, NC 27943

04-29-91
James Archie McBryde Jr.
Kmart Pharmacy
110-112 Bost Rd.
Morganton, NC 28655

05-02-91
Bannie Henderson Hatch
Southeast Specialty Hospital
2401 Southside Blvd., P.O. Drawer 16167
Greensboro, NC 27406

05-06-91
John Gregory Sligar
Eckerd Drugs
1674 West Franklin St.
Monroe, NC 28110

Katherine Denise Wall
Infusion Specialists, Inc.
317 West Chatham St.
Cary, NC 27511

Lori Robinson Kumar
Wal-Mart Pharmacy
3304 Eastway Drive
Charlotte, NC 28205

LSP = Limited Service Permit
T/O = Transfer of Ownership

WORK ELECTED NABP VICE PRESIDENT

David R. Work, R.Ph., J.D., executive director of the N.C. Board of Pharmacy, was elected vice president of the National Association of Boards of Pharmacy (NABP) at the Association's 87th Annual Meeting, May 4-8, at the Westin Hotel in Indianapolis, Ind.

After three years as a member of the NABP Executive Committee, Work can point to a number of accomplishments. He served two years as Executive Committee liaison to the Committee on Pharmacy Practice, and another year as liaison to the NABP Advisory Committee on Examinations.

Work is a graduate of the University of Iowa College of Pharmacy and the University of Denver College of Law. He has been instrumental in sensitizing the profession of pharmacy to the need for specialized counseling procedures for those patients who are illiterate. Work was directly responsible for the development of the U.S. Pharmacopeia Convention's pictogram labeling program, which counsels patients through a universally understood series of graphics.

Work lives in Chapel Hill with his wife, Rebecca, and his daughter, Susan. •

NC BOARD OF PHARMACY ELECTION RESULTS

Members of the Board of Pharmacy Elections certified the results of the recent balloting for two positions on the Board of Pharmacy. The positions are for five-year terms to begin in the Spring of 1992. They are:

District 1

*Ken W. Burleson, *Hickory*	634
*Harold Vann Day, *Spruce Pine*	814
Linda M. Morgan, *Asheville*	299
*William Van Valkenburgh, *Asheville*	392

District 2

*Laura G. Burnham, *Winston-Salem*	331
Frances Gualtieri, *Chapel Hill*	327
*Joseph L. Johnson Jr., *Greensboro*	193
*Jack G. Watts, *Burlington*	1,302

A runoff election was requested in District 1; Watts was declared the winner in District 2.

A ballot will be included in the next Board of Pharmacy newsletter. Votes must be cast by August 19, 1991 when they will be counted in the Board office beginning at 3:00 p.m.

**NCPhA Member* •

PRESIDENT'S PAGE

Continued from page 5

derstand the reasons for the opinions of others.

Lastly, I challenge all members to *participate* with enthusiasm in the activities of our Association. Let's work hard yet take time to have fun (and maybe "pick a few daisies" as Bob Slater reminded us on Thursday). I do appreciate your participation. Let's get the other 2000 members involved and to the Convention next year. I will be sending out letters in the next couple of weeks requesting volunteers for committees and other activities. Your participation and input are vital.

Albert Einstein once stated that "only a life lived for others is worth living." We have chosen the profession of pharmacy that provides the opportunity for us to serve the public and make life better for others who are sick or less fortunate.

If we unite our efforts, communicate effectively and participate with enthusiasm — we can make a difference — for our patients, our communities and our profession. I am excited about the coming year, and I look forward to working with you to advance our Association and the profession of pharmacy. •

NCPhA APPLAUDS DESERT STORM PHARMACISTS

According to *Drug Topics* magazine (May 6, 1991), more than 170 military pharmacists were on duty in the Persian Gulf region and dozens more served in the U.S. when their reserve units were activated.

Among them were the following pharmacists from North Carolina:

Gerald A. DePorter	*Fayetteville*
George H. Futch Jr.	*Chapel Hill*
Carol Labadie	*Colorado*
William W. Pickard	*Durham*
Charles D. Stover	*Pittsboro*
William C. Tarr	*Fayetteville*
Luther G. Williams	*Greenville*

NCPhA is proud of these courageous pharmacists and of their contribution to our country's victory.

Note: At the time of this publication, the NCPhA was only informed of the above pharmacists from North Carolina who were activated during Operation Desert Storm. •

WELCOME, NEW MEMBERS!

The following pharmacists have become members of the NCPhA since the publication of the April, 1991 journal issue. They join more than 2,600 colleagues in the Association who are committed to advancing pharmacy in North Carolina.

Leigh Ann Anderson, *Dunn*
Richard A. Aycock, *Winston-Salem*
Kim D. Binion, *Locust*
Henry N. Graham, *Charlotte*
Bill Karahalios, *Winston-Salem*
Mike Raper, *Goldsboro*
Pamela Wheeler, *Garner*
Stephen Vinson, *Zebulon*
James C. Bell, *Fayetteville*
Thomasena Maxwell-Irving, *Mitchellville, MD*
William L. Sutton Jr., *Chapel Hill*
April E. Andrews, *Rocky Mount*
Joe L. Jeter, *Garner*
Ben P. Daughtry, *Gaithersburg, MD*
Gary H. Freeman, *Charlotte*
Tammy G. Freeman, *Charlotte*

DICKINSON'S PHARMACY

"...unless pharmacy forges a tighter alliance with the public, its future is bleak...Counseling aided by prescription bag-stuffers helps provide a focus in the [patient-pharmacist] relationship that goes beyond price."

Building a network. A Wisconsin independent pharmacist writes, asking for more details about how he might be able to organize a "Just Say No" network with the public, and seeking a sample bag-stuffer.

The pharmacist, Steve Adams, of Adam's Pharmacy on East Mill Street in Plymouth, had read in my monthly newsletter about educating the public to be on pharmacy's side, even as pharmacy turns down certain unfavorable third-party plans.

I'll admit that this is not exactly an idea that is taking pharmacy by storm. But I'm grateful for Steve's interest, because nothing is more certain than the little-discussed fact that unless pharmacy forges a tighter alliance with the public, its future is bleak.

More importantly, if most pharmacists are working for mail-order plants in the future, nothing is more certain than the fact that the chronically medicated public's future would also be bleak.

What more natural alliance could there be, than public and pharmacy bonding together for mutual protection against an anonymous dispensing machine hundreds of miles away where nobody you know ever goes.

But Steve's follow-up to the easier-said-than-done "network" idea exposes a credibility gap between the "ideas" people (e.g., me) and the "action" people (pharmacists).

It's relatively easy to research the practicalities and legalities of a "Just Say No" network among independent pharmacists and then publicize it — but it's altogether another to actually get it off the ground.

Indeed, if one independent pharmacist were to call a second independent pharmacist in a hypothetical scenario and say, "Let's agree to bill no more Aetna prescriptions for United Iron and Feather (UIF) employees," that would legally constitute a conspiracy to boycott — and if I as a writer were to urge Steve to do this, then I could be hauled into federal court for inciting to boycott and being an accessory to an illegal restraint of trade.

The best that this "ideas" person could do in these intimidating circumstances is to say that if I were an independent pharmacist, I would summarily decide myself (all alone) not to bill Aetna for UIF Rx's, make my own arrangements one-on-one with the affected UIF employees, and issue a public announcement explaining what I had done, and the reasons.

Then I would sit back and hope that my colleagues would have the integrity to do the same, in their own ways.

You may say that just shows my naivete, because I seem not to know that if I were an independent pharmacist, my colleagues naturally would not have the integrity to do the same with UIF Rx's (they would, of course, be a pack of greedy, selfish, back-stabbing hypocrites who say one thing and do another).

The point is that if you are so fed-up with UIF Rx's that you would rather have your patients

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy— The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

bill Aetna your usual and customary rate and then trustingly wait for your money from them (thus avoiding AWP-minus, etc. cost containment), then you should not need the parallel actions of other independents to encourage you.

On the other hand, a decision to take this action unilaterally should — *after the fact* — be echoed by others who hear about it.

And who might they hear about it from? Not the initiating pharmacist, but from his (or her) patients, news releases, and the "pharmacist grapevine" (detailmen, trade publications, etc.). This would become pharmacy's "network" — others spreading the word and causing emulation of the initiator's deeds.

The pharmacist who establishes a strong relationship with his/her patient base through both verbal and printed materials will be sufficiently popular to gain the active support of his/her patients in circumventing hostile third-party payment mechanisms.

The common ground in the patient-pharmacist relationship is thus not price alone, but the interdependent relationship itself. Counseling aided by prescription bag-stuffers (I sent a sample to Steve) helps provide a focus in the relationship that goes beyond price.

Success in such relationships and the courage to carefully tell about it, will inevitably provoke other pharmacists to copy that success in their own practices.

Slowly, the network will develop sufficient power — patients and pharmacists together — to counteract regressive third-party policies in their collective, mutual interest.

No third-party plan wants to develop potent ill-feeling toward itself among beneficiaries and client employers — it may not care what the average pharmacist thinks about it, but it will care about employee beneficiaries and the people they complain to (their employers).

All it takes is for pharmacists individually, one after the other (not in an illegal conspiracy), to tap into that patient-employer benefits pipeline in an active and mutually helpful way.

My problem, having planted this "weird" idea, is to find the pharmacist(s) who are willing to kick it off. I will continue to "beat the bushes" for such pharmacists! •



WHEELER SELECTED FOR APPLE COMMUNITY PHARMACY MANAGEMENT PROGRAM

Rebecca A. Wheeler of Charlotte has been selected to participate in the William S. Apple Memorial Program in Community Pharmacy Management this summer in Kingston, Rhode Island. The program, named in honor of past APhA executive director, Dr. William Apple, is an intensive, advanced learning experience designed to enhance the managerial expertise of selected members of the American Pharmaceutical Association. It is designed to bring together leaders in community pharmacy in a university environment for concentrated study, sharing, and growth that would be otherwise unavailable. A total of twenty participants were chosen nationwide for this year's program.

Wheeler has been involved in pharmacy on the local, state, and national levels since graduating from the UNC School of Pharmacy in 1985. She is president of the Wake County Pharmaceutical Association and chairman of the NCPhA Pharmacy Week Committee. Wheeler represented the state as a delegate at the APhA Annual Meeting in New Orleans earlier this year.

Currently, she is the pharmacy manager of Charlotte Pediatric Pharmacy, a physician office based practice at 1700 Abbey Place in Charlotte. •

CORRESPONDENCE COURSE

COUNSELING CONSUMERS ON DRY, CHAPPED, AND SUN DAMAGED LIPS



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. discuss various self-treatable conditions of the lips, and when appropriate, differentiate them from serious medical pathologies; and
2. present current thought on the management of these afflictions with OTC products.

Objectives

At the conclusion of this lesson, the successful participant should be able to:

1. identify the various lip conditions and explain their similarities and differences;
2. choose how to best prevent and self-treat common disorders of the lips;
3. demonstrate an understanding of the ingredients of OTC lip care products, as well as their actions, uses and limitations; and
4. choose from a list important information to convey to consumers who wish to self-treat conditions of the lips.

Almost everyone has experienced the agony of dry, chapped, or irritated lips. Such afflictions can occur year round. They are most common during winter months. Men apply OTC lip balms or other soothing cream or emollient products to their lips to improve comfort. Although women obtain some measure of protection from lipsticks, they also seek added comfort and relief with OTC lip balm products.

Studies have shown that OTC lip protection products have sales appeal as impulse items. They are therefore often displayed at pharmacy and grocery checkout counters. Their sales traditionally rank high among OTC topical products for skin care sold in pharmacies in the U.S.

This lesson summarizes common causes of lip discomfort. It lists means to self-treat various disorders of the lips, and concludes with important points of information to convey to consumers who inquire about lip care and appropriate OTC products.

Common Lip Disorders

Dry, Chapped, and Sunburned Lips. While the lips (like other transitional tissue such as the nostrils, conjunctiva, nipples, external genitalia and perianal area) are continuous with the skin and the body's mucous membranes, they are susceptible to drying, sunburn, and chapping. Unlike the skin, lips

do not contain a significant number of melanocytes, the cells that produce melanin (the body's sunscreen). They do not tan, but can be easily burned by solar ultraviolet (UV) light.

Lips also contain numerous nerve endings which are important to an individual's personal gratification when touching another person. These same nerve endings also account for the discomfort felt when lips become dry, chapped, or irritated. Because of this uncomfortable sensation, the affected person may unconsciously and uncontrollably, but constantly, wipe or lick, or bite or pick at the lips, thus continuing to perpetuate the damage.

Also unlike skin, lips do not contain sweat or sebaceous glands to keep them moist. This is why some persons repeatedly lick their lips. When licked excessively, especially when the lips are dry, they can become even drier and more irritated.

The lips are prone to drying and cracking during all months of the year. But, lip damage is especially critical during the winter. Relative humidity is low in winter resulting in injury to the lips due to a combination of cold air and whipping winds. This is especially true for the northern states and dry western regions. The low moisture content characteristic of winter air translates to a very dry relative humidity when the air is warmed inside the buildings.

Relative humidity, recall, represents the percentage of moisture in the air compared to the total amount (absolute) that it can actually hold at that temperature. The lips can lose moisture to the environment in artificially warmed air. Warm air holds more water than cold air. Therefore, the amount of moisture that indoor, heated air needs to maintain a comfortable relative humidity cannot be adequately supplied by outside cold air which is then heated by a furnace. The result is loss of moisture by skin and other transitional tissue, such as the lips.

Sun can also damage the lips as much during the winter months as during summer. The dry, cold winter air, combined with a snow layer to reflect solar UV rays, may be especially detrimental to lip health. This unexpected damage to the lips may take an individual by surprise.

The higher the altitude, the more intense is the potential for sun-induced lip damage. An increase in altitude of 1000 ft. intensifies the extent of solar damage by four percent. At an altitude of 6,000 ft. above sea level there is, therefore, a 24 percent greater intensity of UV light than at sea level.

Added to this is the snow's ability to reflect the sun's rays. Snow can reflect up to 90 percent of solar rays. Reflected rays can damage the upper lip even more than the lower one, for the upper lip is not shaded from the reflected rays of the sun. So a ski lodge atop a mountain peak may be a prime location to acquire sunburned lips or potentiate damage caused by the dry air and chilling wind. Because of all these combined factors, reflected UV light damage can be even more intensive than that experienced in summer.

UV light and Skin Cancer. Lip cancer is the most common malignancy of the oral mucosa. Lesions typically measure 1 mm or less in diameter, and traditionally occur on the vermilion (red) surface of the lower lip. The lower lip is usually more directly exposed to sunlight. Moustaches, and perhaps even a large nose, may help shade the upper lip.

The primary etiologic factor in promoting lip cancer is accumulated UV irradiation from the sun. This fact may help explain why the lower lip is more susceptible to malignant sun damage. Most sufferers of lip cancer have outdoor occupations such as farming or commercial fishing.

Ninety-five of respondents with lip cancer in one study admitted that their skin burned easily. Sixty-two percent also related a lifelong history of serious sunburn. Reassuringly, lip carcinoma is usually well differentiated, thus easy to detect; and slow to metastasize. Cure rates of 90 percent at five years are common.

Pipe smoking is believed to be a cause of lip cancer because it exerts constant mechanical and thermal irritation to the site on the lips where the pipe is held. However, pipe smoking alone is probably not an important cause. If it were, the trauma would not necessarily be confined to the lower lip. Also, lip cancer is rare in Blacks who smoke pipes, and the proportion of pipe smokers among patients with lip cancer varies considerably in different studies. However, pipe smoking most likely

Table 1
Representative OTC Lip Protectant Products

Product (Mfr)	Form	Ingredients
Blistex Lip (Blistex)	Ointment	Camphor 0.05% Phenol 0.5%, Allantoin 1%
Carmex (Carma Labs)	Ointment	Petrolatum*, Lanolin*, Cocoabutter*
ChapStick (Robins)	Stick	Petrolatums 44%, Padimate 1.5%, Lanolin 1%
Herpecin-L (Campbell Labs)	Lip Balm	Pyridoxine HCl*, Allantoin*, Padimate O*, Tatanium dioxide*
Lip-Gard (Whitehall)	Lip Balm	Live yeast derivative containing skin respiratory factor 67 U/gm, homosalate 5%
Tanac (Commerce)	Stick	Benzocaine 7.5%, Tannic acid 6%, octyl dimethyl PABA 0.75%
Tanac (Commerce)	Liquid	Benzocaine 10%, Tannic acid 6%
Vaseline Pure Petroleum Jelly (Chesebrough-Ponds)	Gel	White petrolatum 100%
Vaseline Constant Care (Chesebrough-Ponds)	Stick	Petrolatum*, Paraffin*

*Concentration not specified

aggravates solar-induced damage, and it is linked to other types of oral cancer.

An ulcer, sore, blister or cold sore that doesn't go away is the type of initial lesion of lip cancer that most affected people report. A persistent roughness of lip tissue, with concurrent crusting or scab formation as the initial lesion, is another symptom sometimes reported.

Treatment of Lip Disorders With OTC Products

Dry, Chapped, and Sunburned Lips. Many of the basic principles that pertain to management of dry skin also apply to dry, chapped, and irritated lips. Some OTC products available for treatment of dry skin *per se* are not suitable for dry lips because they are too easily removed by licking the lips, or because they taste unpleasant.

A **skin protectant** is an agent which protects injured or exposed mucous membrane surfaces from harmful or annoying stimuli. A **lip balm** is defined as a drug product that relieves and prevents dryness or chapping of the exposed surface of the lips.

Lip balms and skin protectants are usually ointments. Products formulated as **"chap sticks"** are solid bars of petrolatum and waxes. They may also contain other skin protectants. Their wax base imparts a solid consistency to the product suitable for applying it in the solid form of a lipstick.

Any of these products are suitable for treating dry, chapped, or irritated lips. Many lip care products also contain local anesthetics, camphor, phenol, menthol, or a sunscreen agent.

The following OTC product ingredients are

Table 2
Representative OTC Lip Sunscreen Products

Product (Mfr)	SPF*	Ingredients
Blistik Lipbalm (Blistex)	10	Padimate O 6.6%, oxybenzone 2.5%, Dimethicone 20%
Blistik Daily Conditioning Treatment (Blistex)	12	Padimate O 7.5%, oxybenzone 3.5%
Chap et Sun Ban (Stanback)	15	Padimate O 7%, oxybenzone 3%
ChapStick Sunblock (Robins Consumer)	15	Padimate O 7%, oxybenzone 3%
Daily Conditioning Treatment (Blistex)	12	Padimate O 7.5%, oxybenzone 3.5% petrolatum**
Eclipse Lip and Face Protectant (Herbert)	15	Padimate O**, oxybenzone **
Hawaiian Tropic Lip Balm Sunblock (Tanning Research)	15	Padimate O**, oxybenzone **
Lipkote by Coppertone (Plough)	15	Padimate O**, oxybenzone **
Mentholatum Lipbalm (Mentholatum Co)	14.7	Octyl dimethyl PABA 8%, petrolatum**
PreSun 15 Lip Protector (Westwood)	15	Padimate O 8%, oxybenzone 3%
RVPaba (Elder)	10	PABA 5%, red petrolatum**
Vaseline Lip (Chesebrough-Ponds)	15	White petrolatum**, padimate O**, oxybenzone **

*Sun Protection Factor
**Concentration not specified

safe and effective (i.e., Category I) for treatment of dry, irritated, chapped lips: allantoin, cocoa butter, dimethicone, glycerin, petrolatum and white petrolatum, and shark liver oil. Most OTC lip care products (Table 1) contain one or more of these drug agents.

Again, many other soothing ointments, and occlusive, hydrophobic substances, will provide relief to irritated lips. Their limitations are their poor substantivity on the lips, formulation difficulties, and unpleasant taste.

Sunscreen Lip Products. An ideal sunscreen should (1) protect the lips against sunburning, regardless of climate, (2) maintain protection throughout the period of normal usage, (3) be nonirritating, nonsensitizing, and nontoxic, (4) be cosmetically elegant, (5) be resistant to removal by licking or biting and, (6) be stable. Products for application to the lips should also have a pleasant taste.

While no single sunscreen is ideal for all persons, the currently marketed OTC products (Table 2) provide the most effective protection against sun-induced damage to the lips.

Sunscreen lip products protect tissue from damage via one of two mechanisms. The first group, represented by chemical sunscreens such as *p*-aminobenzoic acid (PABA), padimate O, or oxybenzone, act by filtering and absorbing UV light in the 290-320 nm (nanometer; 10^{-9} meter) range. They consequently reduce the total amount of UV light that penetrates down to the lips' mucosal surfaces.

The second group, physical sunscreens (sun shades) such as red petrolatum, titanium dioxide, and zinc oxide, are opaque formulations that deflect or scatter the sun's rays. This prevents toxic amounts of solar radiation from reaching the skin. Their major disadvantage is that they are physically uncomfortable and cosmetically unacceptable to many persons for application to large areas. However, they are useful for protecting limited areas of extreme vulnerability, such as the lips.

The product's active ingredients and vehicle are major factors that influence the effectiveness and duration of sunscreen or sun blocking agents on the lips. All sunscreens afford some degree of protection; PABA and its esters display superior protection in most tests when they are compared to other agents.

Sunscreens are normally safe for repeated, continuous use. PABA and its esters occasionally cause allergic contact dermatitis. One study reported a phototoxic reaction resembling severe sunburn, when a product containing amyldimethyl PABA was used. Cross reactivity has also been reported between PABA and its esters, with benzocaine, aniline, sulfonamides, thiazides, and *p*-phenylenediamine. At present, most evidence suggests that increased or decreased sensitivity of the lip mucosa to repeated exposure of sunscreen products is rare.

Sunscreens should be applied 45 to 60 minutes before exposure to the sun. They should also be reapplied freely after swimming or sweating , and at least hourly throughout the period of exposure to sunlight. One investigation revealed that patients with lip cancer that appeared later in life, were active in the sun during ages 20 to 30 years. The cancer appeared after a latent period of another 20-30 years, suggesting that repeated exposure to the sun is needed before significant damage will occur.

It is more difficult to maintain a therapeutic level of protectant product on the lips, than on most other dermal surfaces. Consequently, the vehicle is especially important to lip care products. This is particularly relevant if the substance has an unusual or unpleasant "feel", or disagreeable taste. Many creams and some wax based products may be messy and objectionable to use. The individual may consciously, or unconsciously, lick or bite at the lips and quickly remove the product.

Lip Tips: Counseling Consumers on Their Care

Many OTC products which are intended for use on the lips are indicated to treat a wide variety of lip afflictions. These may include providing relief of dry and chapped lips and recurrent cold sores, and protecting against damage from the sun. Other lip care products are labeled for more limited indications.

Regardless, any product specifically intended for use on the lips will probably afford relief from most self-treatable conditions. Since the lips do not have sweat glands, and the effective use of lip balms is to moisture lip tissue, the person should moisten the lips before applying the products.

Patients who take prescription or OTC drugs that cause drying of the skin and lips should be counseled to consider purchasing a lip protection product. Causative drugs that irritate the lips include Accutane and Tegison, anticholinergics, and antihistamines. Too often, pharmacists forget to use this type of coupling advice that not only can increase the economic health of the pharmacy and capture back some of the OTC sales that have been lost to non-pharmacy outlets, but, more importantly, provides greater patient comfort — a prime goal of the profession.

Consumers may not be fully aware of the importance of protecting the lips from the sun, especially during the chilling winter months. In the warm months, they may freely apply a sunscreen product elsewhere on their body, but fail to apply it to their lips because of their lack of knowledge of the importance to do so.

Table 3
Consumer Information on OTC Lip Care Products

Lip Balms

- This product soothes dry, chapped, or irritated lips and may also provide some protection against sunburn. If uncertain whether it will effectively protect against sunburn ask your pharmacist.
- Apply this product to your lips at least once every hour or whenever needed. A thin layer should be sufficient. Wet your lips before applying. Do not bite at your lips or lick the product off.
- If your chapped lips fail to get better within 7 days, or they continue to get worse, see a doctor.

Lip Sunscreens

- Apply this product on your lips any time they are exposed to sunlight, during the winter or summer.
- Use this product on your lips at least once every hour while you are in the sun. Apply the first application 45 to 60 minutes before exposure to the sun. Wet your lips before applying the product. Do not bite at your lips or lick the product off.
- Apply this product liberally, before and after swimming, eating, and drinking, and during other activities that remove it from your lips.
- If your lips become red or inflamed while using this product, stop using it. If irritation continues or worsens, see a doctor.
- Avoid exposure to sunlight. Wear a wide-brimmed hat, and use a sunscreen product on your lips whenever you are exposed to sunlight.

General Advice

- Drink at least 6 to 8 glassfuls of liquid each day to help restore moisture to your lips.
- Cover your lips with a scarf when outside in chilling winter air. Protect them from direct and reflected rays of the sun.
- If your home or workplace does not have a central humidifier system, consider using portable units to add moisture to your environmental air.
- If you have questions about whether your lips are irritated because they are dry, or damaged by the sun or other environmental causes, or are irritated by a fever blister or canker sore, ask your pharmacist or doctor for advice.

Standard sunscreen products for the skin may provide partial protection to the lips when applied. While these products are formulated with perfumery scents to make them pleasant to smell, they are not manufactured with palatability in mind. Also, they may have poor substantivity (the ability to remain on the skin after swimming or sweating).

It is important for children to use lip balms when they play in the sun or in cold weather. Parents should be more sensitive to their needs in this area. The best way to treat chap-

ped lips and split corners of the mouth in children is to prevent them from occurring in the first place.

Consumers may be sensitive to sunscreens such as PABA, or to local anesthetics such as benzocaine. Affected persons should be advised to avoid use of products containing these ingredients.

OTC lip balm products must be labeled to warn users that if the condition worsens or does not improve within 7 days, to consult a physician. The 7-day limitation is not related to adverse effects of the product; OTC lip care products can be safely used for indefinite periods. The limitation is to alert consumers that dry, chapped, or irritated lips can be caused by pathologies and nutritional deficiencies which, if left undiagnosed and untreated, can be harmful. Such conditions include cheilosis (serious inflammation of the lips), ichthyosis vulgaris (a defect in the horny layer of lip tissue that causes scaling and a "fishskin" appearance), xeroderma (excessive dryness due to an increase in the horny layer of lip tissue), herpes infections, and lip cancer.

The points listed in Table 3 pertain to OTC lip products and self-treatment of chapped lips. They can be conveyed to consumers who purchase them. •

A professional development program made possible by an educational grant from

SEARLE

CORRESPONDENCE COURSE QUIZ

Dry, Chapped Lips

1. The primary etiological factor in promoting lip cancer is:
 a. accumulated UV irradiation.
 b. cigarette smoking.
 c. environmental pollutants.
 d. neoplasms metastasizing from other cancers.

2. Sunscreens, to the greatest degree, are derivatives of the chemical designated by the initials:
 a. APAP.
 b. ASA.
 c. PABA.
 d. PVP.

3. Which of the following drugs is most likely to cause dry, irritated lips?
 a. Achromycin
 b. Accutane
 c. Tegretol
 d. Trilafon

4. The term that best describes serious inflammation of the lips is:
 a. cheilosis.
 b. glossitis.
 c. ichthyosis.
 d. xerodema.

5. The type of cells that produce the substance that is the body's "sunscreen" is the:
 a. granulocytes.
 b. keratin cells.
 c. melanocytes.
 d. sebaceous cells.

6. All of the following OTC ingredients are rated safe and effective for treatment of chapped lips EXCEPT:
 a. aloe
 b. cocoa butter
 c. petrolatum
 d. shark liver oil

7. All of the following points of information are appropriate advice on the application of sunscreen lip products with the EXCEPTION of:
 a. "apply the product 45 to 60 minutes before exposure to the sun."
 b. "dry your lips thoroughly before applying the product."
 c. "reapply the product hourly while exposed to the sun."
 d. "reapply the product freely after swimming or sweating."

8. Which of the following products contains allantoin, padimate O, pyridoxine and titanium dioxide?
 a. Blistex
 b. Chapstick
 c. Herpecin-L
 d. Lip-Gard

9. All of the following contribute to dry, cracking, chapped lips during the winter EXCEPT:
 a. low relative humidity.
 b. whipping, cold air.
 c. artificially warmed indoor air.
 d. insufficient sunlight.

10. The ingredient listed below that is a CHEMICAL sunscreen rather than a PHYSICAL sunscreen is:
 a. padimate.
 b. red petrolatum.
 c. titanium dioxide.
 d. zinc oxide.

Cut out or Reproduce and Mail

CONTINUING PHARMACEUTICAL EDUCATION (CPE)

Dry, Chapped Lips

- Attach a mailing label from *The Carolina Journal of Pharmacy* or print your name and address and mail to: CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514.
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of North Carolina Board of Pharmacy approved CPE credit.
- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

Please circle correct answer

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c d
		10. a b c d

Evaluation of material: Excellent Good Fair Poor

Name _____

Address _____



This column features news briefs about people and events related to pharmacy around the state. The NCPhA staff and The Journal's Editorial Advisory Board welcome your contributions to this column. Photos (black and white) are also welcome. Send us your news!

Honors, Awards, Citations

W.J. Smith, executive director emeritus of the NCPhA, was awarded a "Certificate of Commendation" by the American Institute of the History of Pharmacy for his initiative in organizing the Pharmacy Museum of History in North Carolina. Smith resides in Chapel Hill with his wife, Vivian.

Margaret Boyd, past president, Woman's Auxiliary, NCPhA, and **Shelton Boyd**, of Mt. Olive, were honored as the first "Outstanding Senior Citizens of Mt. Olive." Both were recognized for the tireless work they do for needy persons in the community. Shelton is a 1939 UNC-CH School of Pharmacy graduate.

NCPhA Executive Member-At-Large, **W. Robert Bizzell** of Kinston, was named the 1991 recipient of the "Distinguished Service Award" at the 50th Annual Jaycees Banquet in Kinston. More than 200 persons attended the banquet. Criteria for the award included: community involvement, 50%; leadership, 25%; and personal or business progress, 25%. Winners did not have to be Jaycees. Bizzell is the owner of Realo Drugs in Kinston. Bizzell served this year as president of the Community Arts Council for the Arts and spearheaded a campaign for a $1.6 million Arts Council building project.

John M. Barrainger of Carthage was one of three Moore County citizens recognized for his service to the community by the Carthage Rotary Club at its annual recognition night banquet on March 22.

Lazelle Marks of Rockingham was recognized as the "Small Business Person of the Year" by the Richmond County Chamber of Commerce. He also received a plaque for the "Small Business Person of the Year."

W. Seymour Holt of Indianapolis, Ind., vice president of health-care accounts and administration for Eli Lilly and Co., has been named the recipient of the "Distinguished Alumni Award" by the UNC-CH School of Pharmacy Alumni association. The award recognizes graduates for outstanding achievements that have enriched the pharmacy profession and the School of Pharmacy. A 1957 graduate of the school, Holt conducted a 1972 study for Lilly which resulted in the formation of Dista Products Co.

Evelyn Lloyd, her father, **Allen** and her mother, Pauline, of Hillsborough, received the "Triangle Land Conservancy's Land Stewardship Award" for the family's protection of the Panther's Den on Occoneechee Mountain. In accepting the award, the Lloyds have pledged to maintain and protect the designated area in its natural state.

Dalton Ange of Kinston, **Alan Banner** of Statesville, **Barry Gates** of Mt. Airy, **Edwin Link** of Wilmington, and **Jonas Moretz** of Hickory, received the "1990 Good Neighbor Award" from Medicine Shoppe International Inc. in recognition of their ongoing community service. All are Medicine Shoppe owners; they sponsored free health-care screening and education programs in 1990.

Appointments

Rodney G. Richmond, an active member of NCPhA and *The Carolina Journal of Pharmacy* Editorial Advisory Board, has been appointed director, Drug Information Services at Yale-New Haven Hospital and assistant professor, Yale School of Nursing, in New Haven, Conn.

NCPhA members appointed to NARD's 1991 committees are: **Steven Detter** of Graham, Consumer Affairs & Public Relations; **John Stacy** of Boone, Home Health Care Pharmacy Services; **Rex Paramore** of Nashville, Long-Term Care Pharmacy Services; **F. Michael James** of Raleigh, Management; **Mickey**

Watts of Concord, Multiple Locations; **A.H. Mebane III** of Chapel Hill, National Legislation & Government Affairs; **C. Stroud Tilley III** of New Bern, Professional Affairs; **Michael Morton** of Vanceboro, Third-Party Payment Programs; **Jesse Pike** of Concord, Form of Organization; and **W. Whitaker Moose** of Mt. Pleasant, Membership.

In the News

T&O Drug Store and Cole's Pharmacy can be termed as friendly competitors. Both are located in downtown Roxboro in the same block of Main Street. T&O is owned by **Ronnie and Debi Chandler; Al Cole** and **James Carver** are the proprietors of Cole's Pharmacy. Both are said to have a "personal touch" that makes them so popular in Roxboro. Twenty-four hour a day service and home deliveries are offered by both pharmacies.

Thanks to the gallant efforts of **Rusty Hamrick** of Shelby, a duckling is alive today. At the recent Greater Greensboro Open Golf Tournament, Hamrick rescued a duckling which had fallen to almost certain death in a large culvert. Quick thinking Hamrick used his golf umbrella to drag the little critter to safety, much to the relief of its distressed mother and 10 siblings.

The Drug Information Center of **Campbell University's School of Pharmacy** has received an educational grant from Glaxo Inc. in the amount of $46,000.

Winston Burroughs of Southern Pines presented "Medications for Prime Adults" to the AARP meeting in Southern Pines. Burroughs is a 1964 graduate of the UNC-CH School of Pharmacy.

Births

Mike and **Amy Darrow** (formerly Amy Young), announce the birth of their first child, Joshua Alan, on December 14, 1990. He weighed 6 lbs., 7-1/2 oz. Amy is a 1988 graduate of the UNC School of Pharmacy. She is employed by Lexington Memorial Hospital in Lexington.

Sam and **Robin Meade** (formerly Robin Chapman), of Taylorsville proudly announce the birth of their daughter, Megan Elizabeth. She arrived May 21, 1991 and weighed 8 lbs., 11 oz. The Meades also have another daughter, Victoria, who is two years old. Robin graduated from UNC-CH in 1983 and practices in Lenoir. Sam is a district sales advisor for Marion Merrell Dow.

John and **Margaret LeDoux** of Wauwatosa, Wis., announce the birth of their twin girls, Kelly Margaret LeDoux and Heather Eileen LeDoux. They weighed 6 lbs, 1 oz. and 6 lbs., 11-1/2 oz., respectively. The LeDoux also have a son, Michael, who is three years old.

Deaths

Ida Negron Keetsock of Durham died on May 26, 1991. She was 73. Born in the U.S. Panama Canal Zone and raised in San Juan, Puerto Rico, she moved to Durham to work as a pharmacist — at McPherson Hospital Pharmacy for 20 years and at Lincoln Hospital for eight years. She is survived by her husband, Mitro "Mitch" Keetsock; and a brother, Dr. Henry Negron of San Juan, Puerto Rico.

Robert B. Fairley of Salisbury died on February 27, 1991 at the age of 62. He was a 1952 graduate of the UNC-CH School of Pharmacy. Fairley was the pharmaicst-owner of Doctors Building Drug Company since 1976 until his retirement in 1989 following an illness.

Local Associations

The **Guilford Society of Pharmacists** has installed the following 1991 officers: president, Joe Cassacchia of Thrift Drug; vice president, Larry Brown of Eckerd Drug; secretary-treasurer, J. Frank Burton of Burton's Pharmacy. The Society meets the second Sunday evening of every month in the Area Health Education Center at Moses Cone Hospital.

The **Western Carolina Pharmaceutical Association** met June 9, 1991 in Asheville with a dinner and lecture entitled, "Gastroesophagheal Reflux Disease," sponsored by Allen And Hanburys, Division of Glaxo Inc. Thirty-six persons attended the program. New officers for the year were introduced as follows: president, George Methvin; president elect, Javotte Driggers; treasurer, Gwen Griffin; secretary, Cynthia Niles Berry; and board members, Carol Romine, Pete Sagonias, Robert Whatley and past president Toni Sisk. •

CLASSIFIED ADVERTISING

Classified advertising rates are 25 cents a word for members with a minimum of $5.00 per insertion and for nonmembers, classified ads are 50 cents a word with a minimum charge of $10.00 per insertion. Ads are accepted for a single issue or specific time period only. The closing date for ad orders is the first of the month preceding the issue in which you are requesting insertion. Payment for ad orders will be billed. Names and addresses will be published unless an ad number for a blind ad is requested. In replying to blind ads, send to Ad (), c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. Telephone 800-852-7343 (in state) or 919-967-2237.

Pharmacies For Sale

PHARMACY FOR SALE: Don't miss an exceptional opportunity to become your own boss in a professional atmosphere. An established prescription-oriented pharmacy located in the Winston-Salem area is offered for individual ownership. This opportunity will allow you the freedom to cut your hours, spend evenings, Sundays and holidays with your family and to practice your profession the way you were taught. For detailed information, call John Aumiller 800-325-1397.

PHARMACY FOR SALE: Located in Piedmont, NC. Volume $570,000; accounts receivable $25,000; inventory $75,000. No fountain. Open 55 hours per week. Some financing. Price: $162,500. Bullock & Whaley, 919-395-5898 or P.O. Box 3764, Wilmington, NC 28406.

PHARMACY FOR SALE: Pharmacy well established; Triad area. Open 5-1/2 days/wk. Grosses $570,000K plus; owner financing; 2300 sq. ft. Call V.R. Business Brokers, 919-854-8722.

FOR SALE: Drug store in Piedmont NC. For price of inventory only. Respond to Ad: SAP, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. A.S.A.P.

Community Pharmacist Positions

PHARMACISTS WANTED: Kerr Drug Stores has positions available for pharmacists in some of our locations in North Carolina. Kerr Drug offers opportunity for growth into store management. Excellent benefits. Send resume to: Jimmy Jackson, Director of Pharmacy Services, P.O. Box 61000, Raleigh, NC 27661 or call 919-872-5710.

PHARMACIST OPPORTUNITIES: Excellent environment in which to demonstrate professional skills. Positions available for the very best in many locations in the Carolinas. Excellent compensation and benefit programs including generous bonus and profit sharing. Send resume to Nick Martino, Eckerd Drug Co., P.O. Box 31243, Charlotte, NC 28231, or call 704-371-8242.

PHARMACIST WANTED: Mature, permanent, full-time with management experience for busy independent. (No sundries in stock; only medical necessities.) No nights or Sundays. Eventual ownership possible. Fayetteville: 919-484-6214.

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RELIEF PHARMACIST AVAILABLE: Will travel. Contact Albert Clay, 8009 Kensington Dr., Fuquay Varina, NC 27526; 919-552-2838.

RELIEF PHARMACIST AVAILABLE: Retiring pharmacist; NC and SC license. Seeks regular relief work on a permanent basis, if possible in metropolitan piedmont area. Call 704-455-9290.

Hospital Pharmacist Positions

PHARMACY DIRECTOR POSITION AVAILABLE: The Walter B. Jones Alcohol and Drug Abuse Treatment Facility in Greenville has an immediate opening for a half-time pharmacist (20 hours/week) to manage the pharmacy department. The applicant should have experience and/or interest in the substance abuse field and be comfortable working with patients, physicians, nurses, therapists and other health care professionals. Duties include drug ordering and control, unit dose dispensing, patient teaching, drug usage evaluation and consultation. Competitive salary. For further information, call Louise Hearne at 919-830-3426.

PHARMACIST WANTED: Bertie Memorial Hospital is seeking a full-time pharmacist. Contact Charles Davis, Administrator, 919-794-3144.

Miscellaneous

FOR LEASE: Recently vacated Eckerd Drug Store; 8519 sq. ft. in Murdock Center. SE corner of Roxboro Rd. and E. Club Blvd., Durham, NC. Traffic counts over 45,000 ADT. Contact Rosamond Property Co.: 919-779-7737.

DOCTOR OF PHARMACY (PHARM.D.): Would you like to obtain a Pharm.D. degree? If you are a recent B.S. Pharmacy graduate, contact the Director of Admissions, Campbell University School of Pharmacy, Buies Creek, NC 27506 or Call 800-334-4111, Ext. 3101.

NC PHARMACIST seeks retail position in the Fayetteville area. Would like to be part of a challenging professional environment with growth potential. Reply to ad GAC, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

WANTED: Pharmacist to work in a new field of dispensing drugs. Fresh ideas on distribution, working hours and pay. Send resume to: Ad RBI, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514, and state when you can be interviewed.

FOR SALE: Scottman flake ice machine. Used only 4 months; still under warranty. Makes 400 lbs. of ice daily—$1600. Contact Harry Stone, P.O. Box 1963, Salisbury, NC 28144; 704-636-0680.

Want a charcoal sketch of yourself? Satisfaction guaranteed. Send only $20 and a picture to Betsy Clinard, 1609 Emorywood Dr., Charlotte, NC 28210.•



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THE CAROLINA
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JULY 1991 VOLUME 71 NUMBER 7

Mission Statement for North Carolina Pharmacy

The mission of pharmacy is to serve the public as the profession responsible for providing *pharmaceutical care* — the application of a pharmacist's skills and knowledge in the use of medications, medical devices and related products, and in the provision of services extended on the patient's behalf to achieve optimal therapeutic outcomes.

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NORTH CAROLINA PHARMACEUTICAL ASSOCIATION

Officers

President
BETTY H. DENNIS
104 Calumet Court
Carrboro, NC 27510
919•962•0030

President Elect
HENRY L. SMITH
P.O. Box 147
Farmville, NC 27828
919•753•7111

Past President
J. FRANK BURTON
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Journal Staff

Editor
KATHRYN K. JEFFERSON

Editorial Assistants
ERIE C. COCOLAS
TERRI M. LITTLE

Publisher
ALFRED H. MEBANE III

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343 (NC)

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PRESIDENT'S PAGE

PHARMACEUTICAL CARE: OUR NEW MISSION

Betty H. Dennis, NCPhA President



During our recent Annual Convention, our members adopted a new mission for pharmacy practice: "The mission of pharmacy is to serve the public as the profession responsible for providing *pharmaceutical care* — the application of a pharmacist's skills and knowledge in the use of medications, medical devices and related products, and in the provision of services extended on the patient's behalf to achieve optimal therapeutic outcomes." There is a growing consensus that pharmacists of the future will need to assume greater responsibility for outcomes of drug therapy.

But, haven't we always provided pharmaceutical care? Apparently there are those who think pharmacists are only preparers and dispensers of medications. Past Secretary of Health, Education and Welfare, Joseph A. Califano, recently stated in *The New York Times*[1] that anyone who can read and write can dispense medications and the monopoly that pharmacists have on dispensing drugs should be dismantled to reduce health care costs. Will this attitude grow and jeopardize our future? What do we as pharmacists do that cannot be done as well by anyone who can "read and write?"

I believe that pharmacists have a vital role in the drug distribution system and the delivery of health care. The challenge is to focus our activities to help patients achieve the therapeutic outcomes expected from their therapy. The incidence of medication errors is over 10% and many admissions to hospital emergency rooms result from improper use of medications. We must put our education and professional judgement into practice to ensure the safety and effectiveness of drug therapy.

We are the most accessible health care professional and based on Gallup polls the public trusts and respects us. We have the opportunity to assure that every patient who obtains medication from us has a basic understanding of why the medication is needed and how it should be used.

If every pharmacist in North Carolina made a personal commitment to provide this basic patient education to every patient who receives medication, then our role in the health care system in North Carolina should not be questioned. In fact, our contribution to health care should be readily recognized by the general public, government officials, third party payers, and other health care professionals.

We can do this and it will make a difference!

[1]Califano, JA. More Health Care for Less Money. *The New York Times*. 1991; (May 14): A-19. •

An 8 x 10 inch copy of the new mission statement suitable for framing may be purchased for $2 from the NCPhA office.

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1991 NORTH CAROLINA PHARMACIST OF THE YEAR

FRIDAY EVENING, AUGUST 23, 1991

ROSEBORO FIRST BAPTIST CHURCH

A reception at the church at 7:00 p.m. will precede the dinner which begins at 7:30 p.m. The program recognizing the contributions of Mr. West to his community and his profession will follow the dinner, with NCPhA President Betty H. Dennis as Mistress of Ceremonies. Dinner reservations may be ordered from the NCPhA Central Office in Chapel Hill. Cost is $13.00 a person. On Saturday morning, Mr. West will host a golf tournament at the Lakewood Country Club in Roseboro for overnight guests and others, beginning at 10:00 a.m. A pig picking in the middle of the afternoon will commence about 1:00. Overnight accommodations may be obtained at the Clinton Tar Heel Motel by calling 1-800-243-1778. Don't miss this opportunity to honor one of North Carolina's most outstanding pharmacists.

1990-1991 NCPhA CONVENTION REPORTS

Community Pharmacy Committee

The Community Pharmacy Committee convened Sunday, December 9, 1990. Those present were: Chairman Jonathon A. "Don" Hill, Executive Committee Liaison Albert F. Lockamy Jr., Michael Barnes, Laura Burnham, Roy Johnson, Robert Lewis, and George Peal.

The committee is comprised of the persons listed above and also the following: James Anderson, Randy Lawson, George Anthony, James "Jay" Barefoot Jr., Timothy Liggins, John Malone, Melodie Bowen, Lazelle Marks, Herman Medlin, Tony Gurley, Zeb Keever Jr., R.H. "Rad" Rich, and Jerome Turchin.

The following agenda items were discussed and the indicated recommendations and resolutions were proposed:

Discriminatory Pricing

In spite of legislative and political pressures in this area, obvious evidence of handicapping disparity between retail pharmacy cost prices and other classes of pharmacy, especially hospital pharmacies and mail order pharmacies, still exists.

RECOMMENDATION: The NCPhA, as an organization, and the Executive Director of the Association, and individual members of the Association, should constantly explore state association leverage, legislative enactments, grass roots opportunities, and other contingency plans that can be developed to fight this inequity in our pharmacy practice. A resolution containing these recommendations was submitted to the Resolutions Committee. (See Resolutions Committee Report, Resolution: Discriminatory Pricing.)

Mail Order Prescription Disbursement

The well known dangers and inroads of this method of distribution were discussed at length. The move to mail order prescriptions by Coca Cola Bottling Company Consolidated was discussed also. The chairman was asked to write Coca Cola Bottling Company Consolidated on behalf of the Community Pharmacy Committee expressing our alarm and displeasure that a company which has such a long history of involvement in retail pharmacy, and one that retail pharmacy has consistently supported would take such action. However, before this action could be implemented, the efforts of NCPhA President Frank Burton induced a compromise from Coca Cola. (See "From the Mailbag: NCPhA Puts Cap on Coca-Cola Mail Order Plan," *The Carolina Journal of Pharmacy*, March 1991.)

In an attempt to prevent future problems with mail order, the Committee submitted a resolution to the Resolution Committee. (See Resolutions Committee Report, Resolution: Mail Order Prescription Disbursement.)

The Clozaril Distribution System

This situation was discussed and was viewed by the committee as another means for big industry to attempt to bypass the local community pharmacist in an effort to enhance corporate profits.

RECOMMENDATION: It is recommend that the Executive Director immediately advise any company that bypassed the local pharmacist of our opposition to any such system of distribution.

Third Party Programs

The discussion centered on the need for employers, third party administrators, and any party participating in the third party process to be aware of the basic costs of dispensing a prescription. They should be aware that quality health care, through counseling and quality merchandise, has a basic cost that must be covered.

RECOMMENDATION: The Committee recommends that the Association seize on any opportunity to participate through any vehicle which will aid retail pharmacy in this area.

New Regulations Regarding Medicare DME Forms

The new regulations have left the stores in a state of confusion as to proper procedure,

diagnosis codes, and the local pharmacist's responsibilities with regard to informing patients of the service available to them and the proper filing of the forms.

RECOMMENDATION: It is recommended that NCPhA prepare a small sign that meets the requirement of the law and make it available at a reasonable price to members. Further, the Committee requests that NCPhA work to offer a continuing education program either through its own mechanism or in conjunction with AHECs to educate the interested pharmacists.

Public Relations Image

The committee discussed pharmacy's changing role in the health care system. We have enjoyed a high regard from the public and are at a point in time when we can either enhance or destroy this lofty position.

RECOMMENDATION: It is recommended that all members strive to sharpen their professional practice and to contribute diligently to community relations. Any pharmacist knowing of opportunities or action needed on a statewide basis is requested to either inform the Executive Director of the Association or the Community Pharmacy Committee.

Jonathan A. "Don" Hill, Chairman

Consolidated Student Loan Fund Committee

Our Committee met Thursday afternoon, February 21, 1991 at the Institute of Pharmacy in Chapel Hill. "Thank you" letters from loan recipients were discussed and a few sample statements read. The 1990 academic year was discussed and concerns were raised by Al Mebane concerning the high amount of activity with some 230 loans being made at $300 each for a total of $69,000. Because of this activity, the policy of $300 per semester, $1,800 maximum (cap) over 3 years, a firm ratio for each school matching enrollment, and payback beginning within 6 months after graduation at $50 per month with no interest may need to be looked at more closely. Failure to repay within the time frame results in a 2% above prime interest penalty (only three during the existence of the Loan Fund). The final audited Loan Committee Balance Sheet appears in the table above.

Consolidated Loan Fund
Balance Sheet
December 31, 1990 and 1989

	1990	1989
	Assets	
Cash	$4,808.84	$7,495.86
Student Loans Receivable	152,025.00	127,350.00
Investments (Note 1)	60,091.54	70,191.95
Total Assets	216,924.38	205,037.81
	Liabilities and Fund Balance	
Due to General Fund	4,862.53	5,619.13
Fund Balance	212,062.85	199,418.68
Total Liabilities and Fund Balance	216,925.38	205,037.81

Note 1: Investments, except those received by gift, are recorded at cost. Those investments received by gift as recorded at appraisal value on the date of gift. Market value at December 31, 1990 was $64,569.04 and at December 31, 1989 was $80,279.45.

A motion to consolidate inactive funds was passed, with Al Mebane and Ron Maddox assigned the responsibility to review and implement this motion by the start of the 1991 Fall Semester. Another motion to be implemented immediately was to establish a new loan fund, $300 must be contributed. If less than $300 is contributed, the fund will be inactive until the fund value is $300.

Other motions include the following: The loan ratio for the schools of pharmacy will be 2:1, i.e., two UNC-CH student loans to one CU student loan (based on undergraduate enrollment). The loan ratio will apply until November 1 of the fall semester and April 1 of the spring semester, or until the maximum of $35,000 is reached.

Because the number of loans is increasing

and the number of available students has increased, and the length of schooling is longer at Campbell and possibly at UNC within the next few years, fund raising was determined to be necessary and needs to be addressed soon in order to have funds ready. Staff and the chairman are to report back at the next meeting. Examples suggested include a golf tournament, mailings, a raffle, and opportunity at the NCPhA Exhibit.

A final motion was made to establish for all to see a "Contributor's Record Book" and/or "Plaque."

John B. Zatti, Chairman

Constitution & Bylaws Committee

The Constitution and Bylaws Committee met on April 14, 1991, at the Institute of Pharmacy. Major agenda items included status of Associate Members; election of Directors of the Pharmacy Foundation of NC, Inc.; recommendations from the Ethics, Grievance & Practice Committee; and several amendments of a technical or housekeeping nature.

During the 1990 Convention, a resolution was presented to amend the Constitution (Article IV-Membership, Section 5). This resolution was adopted, and a vote was taken for ratification during the 1991 Convention. The proposed change reads:

Article IV-Membership

This Association shall consist of Active, Associate, Life, Student, and Honorary Members.

Section 5. Associate Member: Any person, not eligible for active membership, who is interested in advancing the profession of pharmacy and is willing to support the purpose and objectives of the North Carolina Pharmaceutical Association. An Associate Member is entitled to all rights of membership except the right to vote or hold office.

In addition, the Constitution & Bylaws Committee endorsed a change in the Bylaws which more fully defines Associate Member as proposed in Article IV, Section 5 of the Constitution. The proposed addition was introduced at Session 1 of the Convention and voted on in Session 3. The Bylaws change reads:

Article V-Membership

Section 6. Associate Member: Any person, not eligible for active membership, who is interested in advancing the profession of pharmacy and is willing to support the purpose and objectives of the North Carolina Pharmaceutical Association. The dues for an Associate Member shall be the same as those of an Active Member.

In response to a request by Dr. Tom S. Miya, Dean of the UNC School of Pharmacy, and the Board of Directors of the Pharmacy Foundation of NC, Inc., the Constitution & Bylaws Committee endorsed two changes in the Bylaws dealing with election of Directors of the Pharmacy Foundation. Due to the presence of two schools of pharmacy in NC and the Association's involvement in the election of directors potentially raising the question of conflict of interest, the Constitution & Bylaws Committee recommended all references to the Board of Directors of the Pharmacy Foundation of NC, Inc. be stricken from the Constitution and Bylaws of the Association.

Upon the formal request from Dean Miya, the chairman of the Constitution & Bylaws Committee polled a number of Foundation Board members, as well as members of the Association for comment on their position. The chairman found a favorable response to this issue. On January 13, 1991, Dean Miya and three members of the Foundation Board appeared before the Executive Committee of the Association to express their support for a constitutional amendment on this matter. The Executive Committee endorsed the concept of this amendment and referred the matter to the Constitution & Bylaws Committee. The Committee proposed a deletion amendment to Article I, Section 1, and Article II, Section 2. The resolution was introduced at Session 1 of the Convention and voted on in Session 3. The amendment reads:

Article I-Election of Officers

Section 1. delete "and four Directors of the Pharmacy Foundation of North Carolina, Inc."

Section 2. delete "and eight or more members as candidates for four directorships of the Phar-

macy Foundation of North Carolina, Inc."

In addition to the above deletion amendment in Article I, the Constitution & Bylaws Committee endorsed the deletion in Section 1 of the wording which deals with the election of officers in the first year of implementation of the changes in the Bylaws which will be introduced at Session 1 of the Convention and voted on in Session 3. The deletion amendment reads:

Article I-Election of Officers

Section 1. delete "The first year following the adoption of these Bylaws changes, six members-at-large shall be elected: two with one-year terms, two with two-year terms, and two with three-year terms."

The Ethics, Grievance and Practice Committee requested a deletion amendment to the Constitution (Article III-Code of Professional Ethics, Section1) dealing with members of the Association subscribing to the Association's Code of Professional Ethics. As the Constitution now reads, each year every member of the Association must subscribe to the Code by written signature upon renewal of membership. The Association staff must keep the signatures on file as a permanent record which has become a burden on staff time and space. The Ethics Committee felt that the original subscription signature to the Code is sufficient to emphasize the Associations mandate that members adhere to the Code. In accordance to their wishes, the Constitution & Bylaws Committee endorsed a deletion amendment to the Constitution (Article III-Code of Professional Ethics, Section1). Since this was a change in the Constitution, the recommendation was referred to the Executive Committee for action. It was endorsed by the Executive Committee and introduced for adoption at the 1991 Convention. Once adopted, it will be voted on at the next Convention. The deletion amendment reads:

Article III-Code of Professional Ethics

Section 1. delete "and continue to do so upon renewal of membership."

The Constitution & Bylaws Committee endorsed a technical amendment to the Bylaws concerning the number of delegates appointed to attend national pharmacy conventions (Article VII-Delegates). Since the number of delegates allotted to the Association varies from year to year, the changed amendment would eliminate the specific number of delegates. The changed amendment was introduced at Session 1 of the Convention and voted on in Session 3. The current Bylaw reads:

Article VII-Delegates

The Executive Committee shall annually appoint two delegates to the American Pharmaceutical Association Annual Meeting House of Delegates, the National Association of Retail Druggists Annual Meeting and the U.S. Pharmacopeial Convention.

The Constitution & Bylaws Committee discussed the possibility of adopting a House of Delegates and improving the communication with local pharmacy associations as studied by the 1989-90 Constitution & Bylaws Committee. Since the Executive Committee of the Association has committed its efforts in the area of strengthening and expanding the local associations, the Committee feels it is premature to propose action concerning a House of Delegates. The Committee does, however, highly recommend that continuing efforts be made to support the local associations. Furthermore, we encouraged all members of local associations attend the Local Association Officers' Roundtable at the 1991 Convention. The intent of the workshop was to strengthen communication, identify issues of importance to local associations, encourage interaction between local associations and promote leadership in our state.

Joseph A. Edwards Jr., Chairman

Employer/Employee Relations Committee

The Employer/Employee Relations Committee identified four primary areas which deserved consideration by our committee. They were:

- Employee compensation packages

- Career ladders/career development
- Patient counseling/dispensing productivity issues
- Job postings/availability/relief help

We then brainstormed interventions which could have a positive impact on each of these four priority areas.

The two interventions which we decided to implement in the 1990/1991 year were:

a) The P.A.C.E. and PhSAT programs to promote excellence in pharmacist compensation packages while encouraging pharmacists toward self improvement.

b) The Big Brother/Sister Program to help pharmacists make themselves available as role models/advisors to fellow pharmacists/students.

The programs are described below.

P.A.C.E and PhSAT Award Program

In an effort to improve pharmacist compensation programs across the state, and to decrease the emphasis on salary as the sole criteria in job opportunity comparisons, the Employer/Employee Relations Committee of NCPhA has initiated the P.A.C.E. (Pharmacist Award for Compensation Excellence) program to recognize those employers who offer exceptional professional and fringe benefit packages to their pharmacist employees.

The purpose of the award is to encourage employers to provide pharmacists with a working environment conducive to personal and professional growth. The committee was careful to create an award which does not discriminate against independents, hospitals, or chains.

The NCPhA Executive Committee approved the P.A.C.E. program at their December meeting. The plan was publicized in the February issue of *The Carolina Journal of Pharmacy.* Nomination forms were distributed in the March issue of *The Tarheel Digest.* May 1,1991 was the deadline for nominations. The 1991 P.A.C.E. recipients were announced at the Awards Luncheon on May 25, 1991.

The PhSAT was added to the nomination packet so pharmacists could not only evaluate their employer's package, but also evaluate what they are offering to the employer. The PhSAT can help pharmacists in their continuing professional development.

1991 P.A.C.E. Award Winners
presented at the
111th NCPhA Annual Convention,
Winston-Salem

Catawba Memorial Hospital
Eckerd Drugs
Gaston Memorial Hospital
Kaiser Permanente
NC Baptist Hospital
Presbyterian Hospital
Yale-New Haven Hospital

Big Brother/Sister Program

In an effort to assist established pharmacists contemplating a career change and graduating pharmacists, the Employer/Employee Relations Committee of the NCPhA instituted the Big Brother/Big Sister Career Development Program. The Employer/Employee Relations Committee feels that due to the ever-increasing range of career options for pharmacists, there is a significant need for role models in our profession. The purpose of the Big Brother/Big Sister Career Development Program is to aid pharmacists in seeking out role models.

Questionnaires describing the Big Brother/Big Sister Career Development Program and asking for participation were developed by the sub-committee. A sample questionnaire is attached. Glaxo Inc. funded the printing of 7000 copies, and questionnaires were included in the April mailing of the North Carolina Board of Pharmacy Newsletter. The program was also publicized in the April issue of *The Carolina Journal of Pharmacy.*

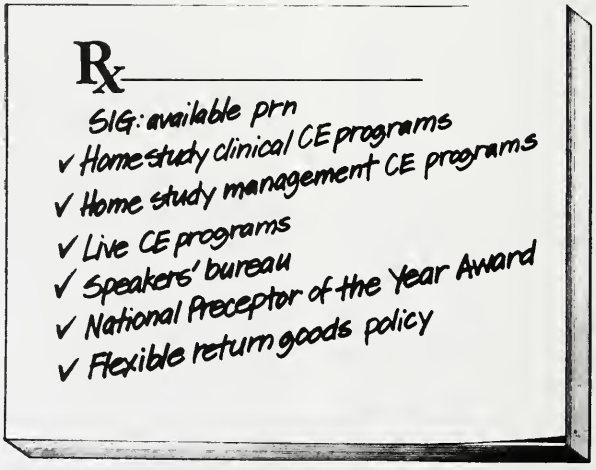
NCPhA staff agreed to take responsibility for filing all returned questionnaires. These questionnaires are filed by practice area and are available for review by pharmacists and pharmacy students at the Institute of Pharmacy in Chapel Hill. As of May, 221 questionnaires have been returned.

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Recommendations to the 1991-1992 Employee/Employer Relations Committee

The new 1991/1992 committee should consider the following questions:

- Should either of the two programs be continued? For one year? Indefinitely?
- If continued, what modifications should be considered (rules, award, plaque, biannual, etc. . .)?
- Obtain Executive Committee approval and funding.
- If funded, begin promoting the P.A.C.E. program in December to pharmacists and pharmacy students before their Career Day in February.
- If funded, how should the Big Brother/Big Sister Career Development Program be promoted?
- How will the Big Brother/Big Sister files be updated?
- Should the Big Brother/Big Sister program be altered so that pharmacists do not have to travel to Chapel Hill to review information on file?

These questions should be discussed in addition to listing and implementing programs to address other issues, and to address any charge set by the Executive Committee.

John I. Mackowiak, Chairman

Finance Committee

The Finance Committee of the North Carolina Pharmaceutical Association consisted of the following: Chairman Henry Smith, Frank Burton, Tim Ives, Rowland Strickland, Ralph Ashworth, Betty Dennis, Clyde Naylor, and Al Mebane.

The Committee met in the fall of 1990 to review the Financial Statement of the Association for the year and to budget for the 1991 year. This budget was approved and presented to the Executive Committee for adoption.

The Committee also discussed the fund raising for the renovation of the building and voted to preserve means to pay for the work as soon as possible.

A copy of the 1990 NCPhA financial report can be obtained by writing or calling the NCPhA office.

A brief summary of the income and expenses for the Association appears in the table below.

Henry L. Smith, Chairman

NCPhA Statement of Income and Expenses, For the Year Ending December 31, 1990
Operating Fund

Income	
Dues	$ 200,463.12
Other Income	183,369.95
Total Income	383,833.07
Expenses	
Salaries & Benefits	141,494.75
Building Renovation and Maintenance	70,237.94
Other Operating Expenses*	192,193.98
Total Expenses	$ 403,926.67

**Does not include depreciation.*

Nominating Committee

The Nominating Committee of the NCPhA presents the following slate of officers in accordance with the Constitution and Bylaws. Each person nominated has agreed to serve if elected. This slate, along with any nominations from the floor of the Convention, will be submitted to the membership by mail ballot.

Those officers elected by a plurality of votes received will be installed at the 1992 Annual Convention to serve the 1992-1993 Association year or as their term of office requires.

The candidates nominated are:

For President Elect:

W. Robert Bizzell, Kinston

Stephen C. Dedrick, Durham

For Executive Committee Members-At-Large: (two persons to be elected for three year terms)

Jonathon A. "Don" Hill, Charlotte

Pamela U. Joyner, Raleigh

John R. Setzer, Winston-Salem
Rebecca A. Wheeler, Charlotte

Members of the committee were: Chairman Betty H. Dennis, *Carrboro*, Randy G. Ball, *Wake Forest*, Cynthia Niles Berry, *Asheville*, Ken W. Burleson, *Hickory*, David N. Cox, *Clemmons*, Ginger L. Lockamy, *Raleigh*, William T. Sawyer, *Hillsborough*.

Editorial Note: Biographical sketches of these candidates will appear in the February 1991 issue of The Journal. At the same time, ballots will be circulated to the membership by mail.

1925 Pharmacy Museum Committee

The Pharmacy Museum Committee of the North Carolina Pharmaceutical Association was established to act as an advocate for the installation of a circa 1925 Drug Store Museum in the New Museum of History building to be located in Raleigh.

The Pharmacy Museum Committee held its Annual Meeting Wednesday, October 3, 1990 in the conference room of the N.C. Museum of History in Raleigh.

Everyone was welcomed by W.J. Smith, Chairman Emeritus. W.J. thanked everyone for their attendance and their continued support of the Drug Store Museum.

In addition to committee members present, we also had in attendance Mr. John Ellington, Museum of History Administrator; Ms. Martha Battle, Museum of History Registrar; and Ms. Eve Williamson, Museum of History Associate Director.

Construction Update

Mr. Ellington gave an update on the progress of the construction of the New Museum of History building and stated that it will be completed and ready for occupancy in early 1992. Mr Ellington also stated that due to the state budget crunch a definite date to move into the building has not been established. Mr. Ellington noted that a minimum amount of two million dollars would be needed for furnishings and equipment for the completed museum building. Mr. Ellington also reported that the John Brantley drug store fixtures (bought in 1906) have been donated by the Brantley family for the Drug Store Museum

Museum Brochure

Milton Skolaut, Chairman of Funds Solicitation, reported that he and his committee are in the process of developing a brochure to be used for the solicitation of funds. When the brochures are ready, the committee will mail personal letters and a brochure to pharmaceutical manufacturers and drug wholesalers. A general mailing to all pharmacists in North Carolina will also be made.

As noted in our report last year, we have received many artifacts for our 1925 Drug Store Museum and, through the generosity of Banks Kerr, they are stored in the Kerr Wholesale Warehouse in Raleigh. Mr. Kerr has also agreed to donate a tin ceiling for the drug store building

Mr. Ernest Rabil stated he has a 1925 drug store weighing scale that he will donate. Mr. Ellington is investigating the possibility of Mrs. Elsie Booker donating her collection of drug store artifacts to the Museum. Mrs. Booker has the most complete selection available and we will be most fortunate if we are able to obtain this collection.

Since our October meeting, we have received donations of artifacts from Mr. Joe Browning, Greensboro; Mr. Nathan McCollum, Reidsville; Mr. Carl Meroney, Columbus; and Mrs. Alice B. Greyer, Bryson City.

$15,250.00 in Donations

We have received donations to date of $15,250.00 for our 1925 Drug Store Museum from individuals and corporations. These funds are on deposit with the North Carolina Museum of History Associates.

We would like to thank each of you for your support in the past and ask for your continued assistance until we are able to complete the installation of the 1925 Drug Store Museum.

W.J. Smith, Chairman Emeritus
L. Milton Whaley, General Chairman

Pharmacy Week Committee

The 1990 Pharmacy Week activities began on October 6 and ran through October 13. For the past several years, Pharmacy Week activities have been initiated with the Pharmacy Fact Day phone-in which was located in four cities across the state last year (1989): Charlotte, Durham, Fayetteville, and Raleigh. Due to the success of the past Pharmacy Fact Days, Greensboro was added as a fifth site for the activities in 1990.

Over eighty pharmacists voluntarily provided the manpower for the six hour Pharmacy Fact Day event. The majority of questions (67%) were received from passers-by in each of the area malls with one-third of the questions received via telephone. The pharmacists statewide received a total of 211 questions with 80% of these questions related to prescription medications and the remaining 20% related to over-the-counter preparations. Almost 50% of all questions related to adverse effects of medication. Another 20% dealt with dosing and administration questions. As in past years, Burroughs Wellcome Co. and Glaxo Inc. made substantial financial contributions for which we are very grateful.

In addition to providing patients with answers to medication-related questions, several other activities were performed on Pharmacy Fact Day. Pharmacists gave passers-by in each mall patient information leaflets concerning medications as well as health care issues (hypercholesterolemia, hypertension, etc.). Pharmacists also provided pediatric dosing information, ipecac/poison control information, pamphlets describing tips for medication safety, and balloons and coloring books for children.

Although the number of drug information questions was not as high as we had hoped, pharmacists who participated felt that the event was a great success. It helped to promote the pharmacy profession as one with a great interest in the public welfare. It also served to promote pharmacists as drug information specialists.

Pharmacy Week ended with pharmacists in Lumberton and Goldsboro sponsoring their own version of the statewide Pharmacy Fact Day on October 13. Pharmacists were located in area malls and answered questions from approximately 80 people.

A statewide assessment was performed. It was, overall, a great celebration of our profession.

Rebecca Wheeler, Chairman

Public and Professional Relations Committee

The Committee met three times during this Association year. The following issues were addressed:

Pharmacist-Physician Relationships

To enhance the professional relationship between pharmacists and physicians, many local pharmacy and medical societies conduct joint meetings. The Committee believes that a good subject for discussion at these meetings would be the interface problems that physicians and pharmacists have while attempting to serve their common patients. Therefore, the Committee has recommended, and the Executive Committee has approved conducting a survey of community physicians and community pharmacists to help describe these interface problems. The results of this survey will be used to construct the program content for local medical and pharmacy societies to use at a joint meeting. This program content format will be provided by NCPhA to local pharmacy societies.

A traditional problem for community pharmacists is incomplete information on prescriptions written by new resident physicians based in our state's teaching hospitals. With the approval of the Executive Committee, this Committee is preparing an information brochure and an accompanying wallet card describing how to write complete prescriptions. These materials will be provided as a service by NCPhA to all new residents in the state's teaching hospitals. They will be distributed through the pharmacy departments of these institutions.

Pharmacy Careers Recruitment Activities

Pharmacists are often called upon to speak to students in their local school systems about pharmacy as a career. To assist association members in this activity, the Committee is working with the North Carolina Society of Hospital Pharmacists Communications and Public Relations Committee to implement a joint pharmacy recruitment program. The NCPhA will be canvassing its members to determine their interest in participating in recruitment activities in their local school systems. Local school boards will be contacted informed of the pharmacists in their area who have expressed an interest in providing pharmacy career information to the students in their schools.

Career Awareness Day at the State's Two Schools of Pharmacy

The Committee is exploring with NCSHP the feasibility of putting together a pharmacy careers information program that can be presented to the students in the Schools of Pharmacy at Campbell University and the University of North Carolina at Chapel Hill. NCSHP already presents an excellent Hospital Pharmacy Awareness Day at each of the schools during North Carolina Pharmacy Week. It would benefit the students to learn about the multiple career options available to them in addition to hospital pharmacy practice. During this next year, the Committee will continue to work on constructing this career information program.

Marketing the Pharmacist's Services

The California Pharmacists Association (CPhA) has prepared an excellent self-instructional program entitled, *Marketing the Pharmacist's Professional Services.* This two booklet program is broken into four sections, each ending with a self assessment examination that can be submitted, along with $6, to CPhA to obtain four hours of CE (total of 16 hours of CE if all four examinations are submitted and a grade of 70% or greater is attained on each exam). The Committee believes that this self-instructional program is an excellent resource for community pharmacists and should be promoted by NCPhA. The two booklets are available from CPhA for $47.00. The program will be promoted to the membership through *The Carolina Journal of Pharmacy.*

NCPhA Tabletop Display

The Committee believes the Association would benefit from having a general purpose tabletop display that would allow exhibition of various information and pictures, depending upon the audience. The display unit could go to the state pharmacy schools to be used for membership recruitment and could display information pertinent to that audience. The display also would be useful at statewide or regional health career fairs, at the NC Medical Society Annual Meeting, etc. The Executive Committee of the Association has approved the funds for this display.

Brown Bag Medicine Review Program

The Committee believes that the Brown Bag Medicine Review Program should be promoted to the membership. The program involves pharmacists distributing brown bags to their patients and scheduling appointments for those patients to return with all their prescription and over-the-counter drugs. This return visit includes a detailed review of the patient's therapy with recommendations for taking medications in the future and physician follow-up if necessary. The Pharmacy Week Committee has decided to make the Brown Bag Medicine Review Program the central activity for 1991 Pharmacy Week in October. The Public and Professional Relations Committee will take responsibility for maintaining information and promoting the Brown Bag Medicine Review Program *after* October.

Public Service Announcement Program

The Committee evaluated a number of public service announcement programs that could be promoted by the Association. This process is ongoing and is recommended for continued

consideration by next year's Committee.

Speakers Bureau on Drug Therapy Topics

The Committee believes that there is a great need for drug therapy information among the general public. Many civic groups invite pharmacists to speak on drug-related topics at their meetings. An NCPhA Speakers Bureau would help to address the needs of such groups. The Committee is completing a speakers bureau member application form to be distributed to the NCPhA membership. This form will allow members to list those topics they would be interested in presenting to local civic and community groups. The form also asks that members give information regarding how far they are willing to travel to speak to such groups. This information will be collected and collated by NCPhA, and civic and community groups across the state will be informed of this service available from NCPhA.

Many of the above activities will be completed during the next Association year. The present Committee will continue to address these projects until President Dennis' new Committee appointees are in place.

Stephen M. Caiola, Chairman

Public Health Committee

A survey of pharmacists who participate in dispensing of medications in all North Carolina Health Departments was prepared and distributed in January 1991.

The survey was conducted for several reasons:

- To examine the roles of pharmacists in health departments
- To track the progress of pharmacists' involvement in health departments since nurse dispensing has been in effect
- To explore possibilities of networking with other health department pharmacists for problem solving and special education programs
- To provide information on special programs conducted at other health departments for Board of Health members

Board of Health member-pharmacists were not asked to complete the survey, unless they actually provide pharmacy services for individual health department clinics or patients.

The survey was mailed to all Health Directors for distribution to their pharmacists. Responses from 69 pharmacists were received representing 58 counties. Pharmacists were asked to provide information about many aspects of pharmacy services: location of services, reimbursement for services, type of clinics/patients served, etc.

In addition, opportunities for networking were addressed and possible topics for future workshops were obtained.

The following is a summary of the pertinent information obtained.

Respondent Information

Consultant/Contact Pharmacists (9 were also Board of Health members)	56
Staff Pharmacists	13
Total Responding	69
Members of NCPhA	48
Number interested in forming an Academy for Public Health Pharmacists	20
Members of NC Public Health Association	4

Dispensing Information

The ways medications were dispensed in the health department before the present pharmacist was employed.

Unknown	23
Clerks	2
RN — FNP/PA	21
Prior R.Ph.	10
Only R.Ph. (since beginning)	1
MD	1

Clinic Services Provided by Health Department

Types of Services	# of Counties
Child Health	28
Adult Primary Care	15
Sexually Transmitted Diseases	58
Tuberculosis	58
Family Planning/Maternity	58
Mental Health	11



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Detention Facilities	9
Dental	9
Adult Health Misc.	43
AIDS	6

Types of Pharmacy Permits
(Some counties have multiple sites)

Full Service	11
Limited Service	40
Service provided off site in retail setting	11
Not Known	11

There was a wide range of contracted hours worked — from 1/2 to 20 hours per week, with a reimbursement rate of 0 to $25/hour.

Eleven pharmacists work 30-40 hours per week on site for health departments. The others work a varying number of hours each week, averaging about 5 hours/week. The number of hours worked depends on the number and variety of prescriptions filled or prepackaged.

Of the pharmacists who responded to the survey, twenty supervise dispensing NP's or PA's, thirty respondents supervise dispensing public health RN's, six supervise other pharmacists and nine supervise technicians.

Professional Development/Networking

Of the 69 pharmacists responding to the survey, 51 were interested in participating in a one day conference/workshop to discuss public health issues and share ideas/experiences.

Topics for discussion/review at the workshop include:

- Management Issues: budget, inventory, pricing, personnel, community perception, pharmacist's responsibilities in the health department mission and goal setting
- Quality Assurance: public health nurse dispensing and the pharmacist's liability
- General Information: AIDS and Mental Health drugs and treatments

Some of the issues that the pharmacists would like to see NCPhA address during the coming year include:

- clarification of the rules and regulations for devices and consistency of rules governing RN vs FNP dispensing;
- resources for providing medication for indigent patients;
- separate academy for public health pharmacists; and
- awareness of the Tuberculosis Program and availability of medications through health departments.

Summary

A higher degree of control of medications is now present in health departments as a result of legislation. Since state law mandated pharmacist supervision of the dispensing function in health departments, more pharmacists have become involved in prepackaging and/or dispensing of these medications.

Services provided by pharmacists in health departments vary greatly in amount of time required and volume of prescriptions filled. All departments responding provide pharmacy coverage for state mandated programs (Sexually Transmitted Diseases, Tuberculosis, Family Planning/Maternity).

The pharmacist's role in the health department is not clearly defined nor understood by the other health professionals and many pharmacists feel they are not fully utilized.

A list of health department pharmacists interested in participating in a one day conference has been compiled. A program covering selected topics may be planned for the coming year.

We would like to thank the pharmacists who took time to complete and return the survey and Glaxo Inc. for providing the funds for reproduction and mailing of the survey.

Peggy Fox, Co-Chairman
Joy Southerland, Co-Chairman

Resolutions Committee

Resolutions Acted Upon at the 1991 Convention

RESOLUTION # 1
IMPRINT PRODUCT IDENTIFICATION

WHEREAS, the Food and Drug Administration (FDA) is the regulatory agency responsible for establishing manufacturing standards for the pharmaceutical industry; and

WHEREAS, current FDA standards do not require manufacturers to imprint oral solid dosage forms with positive identification codes; and

WHEREAS, lack of identification markings poses problems for pharmacists, other health care professionals, and law enforcement officers who frequently need to quickly and positively identify medications; and

WHEREAS, unidentifiable tablets and capsules pose potential health hazards to patients; and

WHEREAS the North Carolina Pharmacy Practice Act (§90-85.28 [3]) requires that "all oral solid dosage forms shall have a logo, or other identification mark, or the product name to identify the manufacturer or distributor;" therefore be it

RESOLVED, that the North Carolina Pharmaceutical Association encourage the Food and Drug Administration to adopt a regulation which would require that manufacturers imprint solid dosage forms with positive identification codes.

Action: *Adopted*

RESOLUTION # 2
TYPE SIZE OF NATIONAL DRUG CODE NUMBERS

WHEREAS, National Drug Code Numbers are required on many insurance claims and other forms; and

WHEREAS, many companies place National Drug Codes on their labels in numerals that are very small and not legible without the aid of a magnifying glass; therefore be it

RESOLVED, that the North Carolina Pharmaceutical Association petition the Food and Drug Administration to require National Drug Codes to be printed in numerals no smaller than eight-point type size on labels for bulk containers and manufacturers' stock packages.

RESOLVED, that a copy of this resolution be sent to the Pharmaceutical Manufacturers Association and all pharmacy associations in the United States seeking their support.

Action: *Adopted*

RESOLUTION # 3
UNIFORM EXPIRATION DATES ON DRUG LABELS

WHEREAS, expiration dates on manufacturers' stock package labels are often hard to read or find; and

WHEREAS, the date is almost impossible to find or read when companies engrave the expiration date over printing and then overwrap; and

WHEREAS, ethical and legal obligations require that out-of-date products be separated from the rest of the pharmacy stock and not be dispensed; therefore be it

RESOLVED, that the North Carolina Pharmaceutical Association petition the Food and Drug Administration to require that uniform and legible dates be printed on all manufacturers' stock package labels.

RESOLVED, that a copy of this resolution be sent to the Pharmaceutical Manufacturers Association and all pharmacy associations in the United States seeking their support.

Action: *Adopted*

RESOLUTION # 4
DISCRIMINATORY PRICING

WHEREAS, discriminatory pricing policies continue to be in evidence, and,

WHEREAS, this disparity imposes an added and unnecessary expense upon the retail customer; therefore be it

RESOLVED, that the NCPhA should continue to search out and implement every op-

portunity to oppose this practice.

RESOLVED, that each member be encouraged to report to the association any information they receive pertinent to any opportunity to fight discriminatory pricing.

Action: *Adopted*

RESOLUTION # 5
MAIL ORDER PRESCRIPTION DISBURSEMENT

WHEREAS, mail order pharmacy is viewed as an inferior health care option; and,

WHEREAS, the general arrangements of mail order pharmacy takes away the patient's freedom of choice; and,

WHEREAS, the professional and counseling relationships between pharmacist and patient cannot exist in this method of prescription delivery; therefore be it

RESOLVED, that the NCPhA through its executive director and committees continue to exert influence against mail order pharmacy for the health, safety, and welfare of the general public.

Action: *Adopted*

RESOLUTION # 6
A NEW MISSION STATEMENT FOR PHARMACY IN NORTH CAROLINA

WHEREAS, efforts led by national pharmacy associations, including the Joint Commission of Pharmacy Practitioners — an organization of representatives from nine national pharmacy associations whose purpose is to address issues of mutual interest impacting the profession — are already in motion to encourage pharmacists to adopt a new mission for pharmacy; and

WHEREAS, the profession of pharmacy has undergone significant changes in its role as a health care provider, i.e., as the preparation of pharmaceuticals has been gradually taken over by the pharmaceutical industry, emphasis on the traditional role of procuring, preparing and evaluating drug products for which the profession of pharmacy had been known for centuries has given way to a patient-oriented practice ; and

WHEREAS, a new mission for pharmacy in North Carolina will assist in completing the transformation of the pharmacy professional to a patient-oriented role; and

WHEREAS, a new mission for pharmacy in North Carolina will unite all elements of pharmacy in North Carolina into one philosophy of practice, i.e., the modern concept of pharmaceutical care; and

WHEREAS, a new mission statement for pharmacy in North Carolina will provide the profession with a well-defined identity and a clearly articulated purpose which the public and other health care professionals can more readily recognize; therefore be it

RESOLVED, that the NCPhA adopt this New Mission Statement for Pharmacy in North Carolina.

Action: *Adopted*

RESOLUTION # 7
FDA ORANGE BOOK RATING ON LABEL

WHEREAS, recent developments in the drug industry have placed the FDA approval status of certain drug products in question; and

WHEREAS, most pharmacists cannot determine the status of certain drugs (whether A code or B code) without purchasing the FDA's Orange Book at great expense; and

WHEREAS, more current and more easily accessible information is needed for pharmacists to meet their ethical and legal obligations; therefore be it

RESOLVED, that the North Carolina Pharmaceutical Association petition the Food and Drug Administration to require the FDA rating for each drug to be printed in a prominent position on all labels.

Action: *Tabled*

Social & Economic Relations Committee

The Socio-Economic Committee met twice during the 1990-1991 year to focus primarily on (1) issues of multi-tiered and discriminatory pricing, (2) issues of invasive procedures and (3) scope and reimbursement for cognitive services.

Issues of multi-tiered and discriminatory pricing. In recent years, pharmacists have become more aware of the wide range of prices charged by manufacturers to various segments of the drug distribution chain and the large difference between costs for the same product in this country as distinct from Canada or Europe.

Never before have community pharmacists been so disgruntled with the manufacturers particular to their profession.

Recently, the drug industry was cited for averaging a 16% return on investment compared to a national average of 6% for manufacturers while continuing to turn out "new" drugs which offer only marginal improvements over their counterparts as distinct from truly innovative research which might justify the 10% differential.

Our concerns in these areas were partially addressed at the 1991 Socio-Economic Seminar held in March where presentations on discriminatory pricing and multi-tiered pricing were heard. We thank Al Mebane for his remarks on the Pryor Bill and Bob Guide of the Pharmacy Freedom Fund for his examples on pricing decisions.

We feel however, that these issues will remain with us next year—and the year after that! So we recommend that these two issues be the focus of the 1992 Seminar too!

The Committee feels that pharmacists must not only gain understanding in this area but also communicate it to the public. In April, Axid™ 150 mg. caps bottle of 60 jumped from an AWP of $64.22 to $73.85. My customers are angry even when they have insurance to help them pay for prescriptions. And I do not blame them. It is time for pharmacists to distribute postcards such as the following or other materials in order to slow these increases.

My pharmacist has explained to me that the prescription which I just purchased would cost SEVERAL DOLLARS LESS if only the manufacturer sold the medication to pharmacists in the United Sates at the same **price that the** same **manufacturer sells the** same **medication to pharmacists in Canada.**

Lobbyists for the manufacturers claim that the higher U. S. prices are necessary to pay for the research and development (R&D) of new drugs, but do we Americans have to finance the R&D for the entire world? And, did not Congress, a few years ago, grant generous corporate income tax credits to pharmaceutical manufacturers specifically to pay for their R&D?

Why will Congress not subpoena pharmaceutical manufacturers for the information necessary to conduct a comprehensive investigation into their pricing practices? Surely something can be done to afford us relief from these outrageous prices without adversely affecting our health care system.

Issues of invasive procedures. A second major area of interest to the committee is invasive procedures. We hope the "legal fog" on this matter (it is neither permitted nor prohibited by the current pharmacy practice act) will soon be lifted.

The Committee wishes to to encourage work now to develop protocols for these efforts regarding:

A) Range of services,
B) Education requirements and communication skills,
C) Enforcement and Review,
D) Reimbursement from Medicaid, third party, and the general public.

The Committee would also ask the Association and its Executive Committee to vigorously pursue this matter as it related to the expanded role of counseling being urged upon the profession.

Scope and reimbursement for cognitive services. The range and scope of cognitive services expected from our profession is another area of committee interest, as is reimbursement for the same.

Drug Topics, in its two issues of April 1991, cited various persons and/or institutions working in this area.

The Committee would ask the Association to collect information and evaluations of these projects and to critique them with a view toward proposing a "North Carolina Model" that might be funded through Medicaid as a test project.

The Committee would appreciate endorsement of theses initiatives and efforts by the Association.

John A. Mitchener III, Chairman

State Legislation Committee

After analysis of the membership and leadership of the current General Assembly, the State Legislation Committee realizes the uncertainty of the outcome of major legislation at this point. There are, however, certain bills we feel comfortable recommending and their passage should be relatively assured.

We have collectively agreed that we use this available time to our advantage and design a plan by which this, and future, state legislation committees may better define and administer legislative issues. We will outline this "Issue Management Legislative Program" and will later parallel this program with objectives generated by our current committee. We feel this program should have the endorsement of the Executive Committee as certain projects discussed are relative to the performance of future Executive Committees.

The categories of issure management with abrief description of their function where necessary follows.

I. Maintenance: (Hold on to what you have.) We must continue to watch those issues that have been decided favorably for pharmacy to make sure we do not lose ground by future legislation.

II. Readiness for opposition: We must be ready to oppose unfavorable legislation.

III. Support favorable legislation generated by allied groups, i.e., the Retail Merchants Association.

IV. New Legislation: Annual

V. New Legislation: Long Term

Our meetings to date have rendered the following "Issue Management Legislative Program" for this year.

I. Maintenance

A. To date we have fortunately held off attempts to coerce the state to adopt a mail order prescription service for its employees. We must continue to monitor efforts to entice the state into mail order. We request that our lobbyist advise us of any change in circumstances he encounters on this issue.

B. Recent proposals for reduction of the AWP cost in the Medicaid Program prompts concern from the committee. We recommend our lobbyist monitor and relate any future action on this subject.

C. Manufacturers rebate with regard to Medicaid and state employees is an issue which this committee could not resolve, however, we feel that observation of this issue is in the best interest of the NCPhA.

II. Readiness For Opposition

As stated, the mail order threat for state employees deserves continuous observation, with periodic update of whom to contact and what we should do if it becomes apparent it will be introduced.

III. Support Allied Groups

We recommend the endorsement of three bills sponsored by the Retail Merchants Association, and upon approval of the Executive Committee recommend a letter be sent to that association stating such endorsement.

A. The bill regarding civil restitution in the amount of $200 to $500 for persons convicted of shoplifting.

B. The bill correcting the technical language of the larceny and embezzlement statute.

C. The bill requesting reinstatement of the fee for the collection of sales taxes.

IV. New Legislation: Annual

A. Whereas the issue of per diem reimbursement for Board Members (an increase from $35 to $100 per day) has passed the House and awaits passage in the Senate, the committee

1991

BUYER'S GUIDE



Last year nearly 2000 Community Pharmacies throughout the Southeast took advantage of the great prices and terrific selection of merchandise in the Buyer's Guide. This popular alternative to a trade show features promotional merchandise for all seasons in addition to HBA's, OTC's and prescription products.

The 1991 Buyer's Guide once again offers an outstanding selection of products. You'll be flying high with purchase incentives, extra discounts, extended dating and attractive premiums prepared with your needs in mind. For more information call or ask your Durr representative about the 1991 Buyer's Guide.

DURR-FILLAUER MEDICAL, INC.

Wholesale Drug Division
P.O. BOX 244003 □ MONTGOMERY, ALABAMA 36124 □ (205)834-3600

would endorse presentation of the bill; however, the uncertainty of the current impasse and the lawmakers' possible failure to realize that it does not affect public funding may prevent its success. We advise that our lobbyist monitor and use his judgment with the bill.

B. We recommend that the Executive Committee promote legislation to control pharmaceuticals in salvage and the proper disposal of salvage.

C. We recommend that the Executive Committee promote legislation requiring the labeling of any legend drug in the possession of individuals other than a prescriber or dispenser. Such labels should require:

1. Whom the medication is for (patient).
2. Whom the medication is prescribed by (the prescriber).
3. The name of the drug.
4. The directions for administration of the medication.

V. New Legislation: Long Term

We propose that the Executive Committee promote a better bill for physician dispensing in the 1991 session of the Legislature using language to that of bills recently passed by other legislatures.

The committee spent considerable time in two of its meetings discussing methods to improve legislative readiness and pharmacists' awareness of issues. We recommend a quarterly legislative newsletter as an aid to both objectives. The newsletter's first mailing would go to all North Carolina pharmacists with an indication that it is "a one-time free mailing" in an effort to promote Association membership. Subsequent mailings should be directed to NCPhA members only; however, the committee feels that the newsletter could be a useful tool for informing all North Carolina pharmacists about an important individual legislative issue should the NCPhA so desire.

At this juncture there are a number of legislative issues which need a "watchdog" approach in relation to our issue management program. For clarification and as an aid to our lobbyist, the committee felt we should list and specify those issues which warrant careful monitoring and corresponding to the Association by him.

1. Attempts to put state employees on a mail order prescription service.
2. Introduction of a manufacturer's rebate bill for Medicaid and state employees.
3. Movement in House or Senate on issues regarding Medicaid
4. Per diem increase for board members.
5. Aforementioned bills presented by Retail Merchants Association which we wish to endorse.
6. Any information he feels is necessary and/or helpful with regard to our long term legislative goal of a better physician dispensing legislation for the 1991 session.

William Jackson, Co-Chairman
Ralph Ashworth, Co-Chairman

Third Party Committee

The Third Party Committee met three times during the year. The meetings were held on October 7, 1990; November 26, 1990; and January 28, 1991. The committee members were: Recie Bomar, Terri Bostick, Walter Davis, Betty Dennis, Sam Fayed, Mike Fitzgerald, James Hall, L.W. Harris, David Hix, Jimmy Jackson, Tim Lassiter, Robbin Lee, Bill Mast, Glenn McLeroy, W.E. Medlin, James Robertson, Ronald Shokes, Tom Thutt, Davie Waggett, Mickey Watts, and Chairman Jan Hirsch.

A synopsis of the committee activities is presented below.

The objective of the Third Party Committee this year was to explore a variety of avenues for pharmacist action related to the broad area of third party payor recognition and reimbursement for pharmacy services.

The committee activities were focused on two primary issues:

1) Adequate reimbursement rates and systems within third party programs and

2) Proactive efforts to shape future third party regulations through participation in the demonstration projects mandated by congress as part of the 1990 OBRA legislation (Pryor Bill). Actions taken related to each area are presented below.

Adequate reimbursement rates and systems within third party programs

Arkansas Reimbursement: The Arkansas reimbursement system was explored and discussed as a possible template for North Carolina. Arkansas has a "percentage on cost" dispensing fee system. A consultant report which was commissioned by Arkansas and served as the basis for their reimbursement formula was obtained and reviewed. A copy was sent to Al Mebane and forwarded to the legislative committee. The Third Party Committee agreed that the Arkansas system warranted further follow up and study. It is recommended that next year's committee continue to explore the feasibility of creating a similar reimbursement scheme in North Carolina.

Reimbursement Rates: The Third Party Committee was made aware of a survey conducted by Mr. Bill Mast for the purpose of illustrating Medicaid reimbursement rates from a community pharmacy perspective. In response to Mr. Mast's request, the committee voted to endorse the spirit of Mr. Mast's efforts which reflect the encouragement of pharmacist participation in programs and actions which promote adequate reimbursement for pharmacy products and services from all third party payors.

Proactive efforts to shape future third party regulations through participation in the demonstration projects mandated by congress as part of the 1990 OBRA legislation (Pryor Bill)

The committee actively pursued efforts to make North Carolina a test state for the drug utilization studies required by the OBRA legislation. Two types of studies have been mandated: i) Prospective Drug Utilization Review Project and ii) Cost-Effectiveness of Reimbursement for Pharmacists' Cognitive Services. The objective of the committee's actions was to *facilitate* a successful proposal from NC in response to the Request for Proposals (RFP) issued by HCFA as mandated by the OBRA legislation.

Action: The Committee gained the NCPhA Executive Committee's endorsement of the goal, and $100 in proposal development funds to be provided to researcher(s) who would work with NCPhA's active support.

Action: The committee arranged a meeting of relevant researchers from Campbell University, UNC School of Pharmacy and NCPhA leadership. It was the committee's belief that cooperation and input from a variety of researchers and practitioners would be needed to begin to create a successful proposal. The purpose of the meeting was to provide a forum to explore and possibly define working relationships which would enhance North Carolina's chance of becoming a test state for these important demonstration projects.

The meeting was successful in providing a forum for constructive discussion. Since a principal researcher from Campbell, Dr. Fred Cox, was unable to attend, the end result of the meeting was agreement between the UNC and Campbell representatives to decide upon a specific working relationship at a followup meeting to be arranged by Dr. Joe Norwood, Chairman Pharmacy Administration, UNC School of Pharmacy. Proposal development is currently proceeding with a multidisciplinary team from both Universities.

3) Several issues identified at the first meeting's "brain storming" session were judged to be tangential to the committee's objective but important to the Association.

These issues and the accompanying action taken are listed below.

i) Exclusive Contracts/Freedom of Choice:

Action: Letter from committee was sent to the Legislative Committee chairman to express concern and suggest as a topic for their committee action.

ii) Prescription Data Use:

Action: Letter to Ethics Committee chairman to suggest as a topic for their committee members.

iii) Third Party Information Update Newsletter:

Action: Letter to Kathryn Jefferson, Editor of *The Journal,* to suggest a column related to updating pharmacists on changes and status of various third party programs throughout the state.

iv) Third Party Issues and Discussion Forum at Annual Meeting:

Action: Providing a forum for pharmacists to share and constructively discuss problems and solutions to common third party program issues was endorsed by the committee.

This proposal resulted, in part, from the many issues specific to the North Carolina Medicaid program which the committee members questioned and discussed through correspondence and discussions with Benny Ridout. The need for further clarification of many basic practices affecting practicing pharmacists was clear (e.g. EDS updates, fees for refill prescriptions, use of manufacturer's rebates to Medicaid). Delineation of issues and boundaries of the current Medicaid program would be helpful in determining appropriate future action to influence the state's Medicaid program. The Third Party Forum was seen as one way in which to begin to sort out these complicated issues.

Time and space requirements were such that it was not possible to schedule a forum at the 1991 Annual Convention. However, the committee recommends that a Third Party Forum be pursued at the 1992 Annual Meeting.

Jan Hirsch, Chairman

Annual Report of the Campbell University School of Pharmacy

The Campbell University School of Pharmacy has had another exciting year of growth and development. The faculty was increased to 29 with the addition of a basic science member in biotechnology. The School reached its maximum enrollment of 268 students this fall. We continue to accept an entering class of 65 students from an applicant pool of greater than 5 applicants per position available. Each class consists of approximately 60% females, 80% North Carolina residents, and 50% Campbell students.

Our faculty continues to be very productive in teaching and scholarly activities. For example, Dr. Kathy Bucci recently received one of the American Association of Colleges of Pharmacy grants. Dr. Bucci's grant entitled, "Implementation of Evaluation of a Shadow Program for Pharmacy Students," is intended to assist freshman pharmacy students to recognize the practical application of the didactic curriculum and to identify postgraduate career opportunities.

When Campbell University School of Pharmacy was initiated in 1985, a five year plan was put into effect that has guided the school's growth and development. As we move into the next phase of development, our emphasis shifts from establishment to refinement of our programs, courses, and research efforts. Hence, the faculty developed *The Campbell University School of Pharmacy 1990 Strategic Plan* to guide our progress through the coming five years.

A cornerstone to this plan is the construction of an addition to the current pharmacy facility to alleviate overcrowded classrooms, laboratories, and offices. This expansion will provide a lecture hall, communication lab, seminar room, faculty office space, and additional laboratories for research and teaching activities. The projected cost of this addition is 1.1 million dollars, and we are currently involved in a building campaign to support this project.

In December, a groundbreaking ceremony was held to celebrate the beginning of construction on this addition. A brilliant keynote address was given by Whitaker Moose in which he asked, "What has Campbell meant to pharmacy in North Carolina?" The old saying is 'the proof is in the pudding', meaning don't measure us by what we say, but by what we do. Campbell has graduated its charter class. These young pharmacists have found positions in hospitals, industry, retail pharmacy, and in academia, as well as furthering their education. From these young pharmacists will come tomorrow's leaders, teachers, researchers, company managers, and practicing pharmacists. Read any list of North Carolina pharmacy committees and pick out the Campbell University faculty represented. They are certainly carrying their load toward the greater goal of making pharmacy in North Carolina better."

An accreditation team from the American Council on Pharmaceutical Education visited the School in April. We received an excellent

report which included numerous positive comments such as "Accomplishments are noted on essentially all fronts and are in accord with the best expectations for a development program."

As we complete this academic year we find ourselves at a crossroads. For the past years we have devoted our efforts to establishing a school of pharmacy that will contribute a vital new element to the profession. Now our goal is to refine our efforts, always striving to make Campbell University stronger in every way.

As always, we appreciate the support of the pharmacists of North Carolina in our endeavor.

Ronald Maddox, Dean

CU School of Pharmacy Class of 1991 Career Paths*

Michelle Allen, Undecided
Norris Babb, Brunswick Hospital, *Supply*
Melvin Barnhill, Revco, *Emerald Isle*
Billy Bell, U.S. Public Health Service, *Talihinda, OK*
Mary Bender, Undecided
John Boyd, Mast Drug, *Oxford*
Vicki Burchette, NC Baptist Hospital, *Winston-Salem*
Joseph Cole, Undecided
JoAnn Dempster, Kerr Drugs, *Fayetteville*
Karen Downing, Undecided
Jean Early, residency, Med. Univ. of S.C., *Charleston, SC*
Rhonda Fallin, Undecided
Thomas Furman, Boone Drug Inc., *Boone*
Karen Gentry, Undecided
Dina Goodson, Undecided
David Grove, Northern Hospital of Surry County, *Mt. Airy*
Tina Harrison, Undecided
Lisa Head, *Charleston, SC*
Deborah Hester, Undecided
Kimberly Hoffman, Rite Aid, *N. Belmont*
Leatha Horton, *Knoxville, TN*
Lois Johnson, Undecided
Randall Jones, Eckerd Drug Co., *Wilkesboro*
Micheal Kanetzke, Kerr Drugs, *Eastern NC*
Tracey King, Grace Hospital, *Morganton*
Melissa Lewis, Erie County Medical Center, *Buffalo, NY*
Bruce Lucas, residency, Indiana Univ. Hospital, *IN*
Vickie McLean, Children's National Medical Center, *Washington, D.C.*
Reba McSheehy, Revco, *Wilmington*
Kimberly Mock, Eckerd Drug Co., *Morganton*
Sally Morton, Undecided
James Mundy, Moses Cone Memorial Hospital, *Greensboro*
Gene Nobles, Bladen County Hospital, *Whiteville*
Elizabeth O'Ham, Mercy Hospital, *Charlotte*
Paige Oliver, Undecided
James Osborne, Eckerd Drug, *Wilkesboro*
Debra Pearson, residency, Medical College of Virginia, *Richmond, VA*
Nga Pham, hospital pharmacy, VA
Kimberly Poinsett-Holmes, residency, Campbell Univ. Drug Information Center, *Buies Creek*
Suneeta Prasad, *Rutherfordton*
Mark Realini, *Charlotte*
Patricia Roberts, Undecided
Helen Sands, Undecided
Lora Seay, Carteret General Hospital, *Morehead City*
Pamela Shelton, Family Pharmacy, *Walnut Cove*
Wayne Smith, Cabarrus Memorial Hospital, *Concord*
Melissa Atone, Revco, *Lumberton*
James Sugg, Hoolwell's Drug Store, *Greenville*
Tasha Suggs, Cabarrus Memorial Hospital, *Concord*
Pamela Sutton, Undecided
Whitney Swatzson, Undecided
William Symonds, Millard Fillmore Hosp., *Buffalo, NY*
Angela Tennant, Kerr Drugs, *Shallotte*
Jeffrey Thompson, Revco, *Wilmington*
Robyn Tilley, Durham County General Hospital, *Durham*
Rick Trivette, Watauga County Hospital, *Banner Elk*
Sallie Turlington, Undecided
Joseph Wallace, Eckerd Drug Co., *NC*
Paula Warrick, Undecided
Tammie Watkins, Undecided
Robert Whaley, Undecided
Jennifer Wiggins, Revco, *Fayetteville*
Amy Williams, pharmacy intern, *Rocky Mt.*
Lydia Woodard, Undecided
Mickey Worthington, Eckerd Drug Co., *Monroe*

** This information was current as of May, 1991.*

Annual Report of the Campbell University School of Pharmacy ASP Chapter

I would like to first extend to you greetings from Buies Creek. This has been another exciting year for Campbell University School of Pharmacy. It has been a year of tremendous growth and prosperity. Likewise, we are extremely proud of our chapter of the Academy of Students of Pharmacy (ASP), which has also grown and excelled in many areas over the past year.

It is vital for any organization to have many service as well as educational programs in order to grow and prosper. Our chapter has been very active in service to the school but also to the community as well. Service projects have included sponsoring a continuing education program for pharmacists this past fall on diabetes control. This turned out to be a great success because it benefited not only the pharmacists that participated but also a number of our students. We also supported our university in it's bone marrow drive by getting involved and sponsoring one of our own student members, Mr. Benny Morris as a potential donor.

Once again this year, our chapter sponsored the Teacher of the Year award which was presented to Dr. Kathy Bucci of the Duke Family Medicine Center. We also sponsored the Preceptor of the Year award which was presented to Dr. Chris Brock of the Duke University Medical Center. This local selection of Dr. Brock will allow him to compete in the competition sponsored by Syntex for the National Preceptor of the Year.

In the past, we have been able to report about our chapter's involvement in our school's patient counseling elective and the subsequent patient counseling competition. This year is no exception. The course has allowed students to not only practice counseling patients regarding the use, side effects, and adverse reactions of medications, but also the chance to become familiar with the top 200 drugs. This course has also helped to prepare many of our students for the ASP-APhA national patient counseling competition which is held each year at the annual meeting of the APhA. Our representative this year was Mrs. Susan Hailey. We are extremely proud of her efforts.

One of the more enjoyable aspects of our chapter's involvement is attendance at the regional and national meetings. These meetings afford us the opportunity to attend educational seminars which help to lay the foundation for our future roles as practitioners and managers. Ten of our student members to attended the regional meeting which was held this past November in Chapel Hill. Forty student members attended the national meeting which was held in New Orleans, LA at their own expense. These meetings proved to be very informative as well as an opportunity for us to interact and share with pharmacy students from across the entire nation.

During the national meeting this year, our chapter won two very important awards. The first was a membership achievement award for having attained the highest percent increases in membership of any chapter in the nation. The second was a certificate of recognition for outstanding administrative activities and for participation in the 1990 chapter achievement award competition.

We are looking forward to and are very excited about the upcoming regional meeting which is to be held this fall, as well as the national convention in San Diego next March. Once again, in an attempt to allow more students the opportunity to attend the national meeting next year, our chapter has successfully petitioned the faculty to change the dates of our spring break in order to coincide with the APhA convention.

In closing, we would like to take this opportunity to thank our faculty advisor, Dr. Fred Cox, who has been supportive all year long; our dean, Dr. Ronald Maddox, for all that he has done; and the entire faculty and staff of our school of pharmacy. Finally, we would also like to take this opportunity to offer a very special thanks to the North Carolina Pharmaceutical Association itself. We are deeply indebted to your professional advice and support in the past, and we look forward to a continued association with the organization in the future.

Jerry Haynes, President

Annual Report of the UNC School of Pharmacy and the Pharmacy Foundation of North Carolina, Inc.

UNC School of Pharmacy

It is a pleasure for me to report to this, the 111th Convention of the North Carolina Pharmaceutical Association. It is a special pleasure to bring greetings to this Convention during which a rare thing takes place — the inauguration of the first woman president of this Association in its history. Dr. Betty Dennis is one of our valued faculty members who has had a significant impact on many, if not all of you through her office of director of Continuing Education.

In my report last year I related to you the beginning signs of an onerous impact on the University and the School as a result of revenue difficulties. This has drained both psychic energies and other resources. Beyond this, however, it has been a very busy and fruitful year for the School.

Undergraduate professional education continues to receive priority attention, and none of our students can say that budget shortfalls have had an adverse impact on their education. The microcomputer laboratory was again updated with the latest hardware and state-of-the-art projection equipment was installed in the much used lecture hall. Old courses are being revised, and new courses are being developed. All of this keeps us in tune with advancing knowledge and technology.

The School continues to attract the best applicants in increasing numbers. About 10% of the current student body graduated first or second from their respective high schools. In the class of 167 students who matriculated in the fall of this year, about 19% were ranked first or second in their high school class.

Four external site visitors from the Graduate School scrutinized our advanced degree programs. A strenuous self-study preceded the mid-March site visit. The report of the site visit has not yet been received, but we anticipate it to be favorable.

Several other activities continue to require much of our time. We are involved in the Chancellor's Call to Plan. A penultimate report of our Plan with goals and strategies for the next five years has been delivered with a finalized Plan to be in the Chancellor's Office by June 1. I will discuss the School's Plan before the Chancellor's Planning Review Board on June 25. Concurrently with University Planning, the faculty have been engaged in revising the School's Strategic Plan, "Planning for Excellence," developed during 1985-86. From this activity will emerge our comprehensive Self-Study document for purposes of accreditation. The American Council on Pharmaceutical Education on-site visit will occur in mid January 1992.

As we continue to develop international relationships, an exchange program agreement was signed with Kaohsiung Medical College in Taiwan, ROC. This agreement, together with others, will allow us to exchange scholars and ideas and will lead not only to the development of new knowledge, but also assist our national agenda of mutual technological and economic development. I was privileged to be invited to Taiwan (at their expense) to sign this agreement and had the opportunity to present two lectures at Kaohsiung Medical College and one lecture at the National Taiwan University in Taipei. Dr. James Swarbrick spent two weeks lecturing at the Shanghai Medical University School of Pharmacy in April, and Fred Eckel was at Beijing University and also at the University of Nigeria just prior to that. William Sawyer has just returned from Riyaud University, Saudi Arabia. Our undergraduate student exchange program with the University of Wales continues in a very positive way. No state funds are being expended for these programs.

I am most proud of our faculty. Even in these chaotic times of severe budgetary constraints, they continue to be competitive in many ways. Steve Caiola and his colleagues competed for an AACP GAPS (Grant Awards to Pharmacy Schools) and received the largest grant made to any school to develop "A Community Pharmacist Clinical Clerkship Model." Steve's previous grant from the same source, "Training Pharmacy Preceptors," resulted in the development of video-trained vignettes and master teacher and participant manuals are

now being made available through AACP to all schools of pharmacy. I particularly wanted to make you aware of these grants which represent research in the instructional field which has and will have a significant impact on the quality of education and practice. I also want to thank many of you who participated and will be participating. Our faculty has become increasingly more competitive for extramural funds. We will approach or exceed $4M this year. An example of our competitiveness is that our faculty sought scarce equipment grants from NIH and have been successful in two of the last three years. This year a $200,000 G.C. Mass Spectrometer was awarded, and two years ago we were awarded a NMR at $360,000.

We are most proud of our students. Most of you know that Martha Wall captured the USP-sponsored Patient Counseling Competition. Over 1500 students from 70 out of the 74 schools of pharmacy competed. The 70 top contestants competed during the APHA Annual Meeting in New Orleans. President Julie Haizlip will detail this and other student activities in her report.

There are many other items, too lengthy to report at this time, but the School's report would not be complete without informing you that your Executive Director, Al Mebane, was the recipient of the School's Annual Distinguished Service Award. Al Mebane, your President Frank Burton, and Pharmacy Alumni Association President Randy Knott Participated in the School's commencement exercises on May 10. Group Vice President Robert A. Ingram of Glaxo Inc. gave the commencement address.

Tom S. Miya, Dean

UNC School of Pharmacy Class of 1991 Career Paths*

April Andrews, UNC Pharm.D. Program, *Chapel Hill*
Wells Armstrong, Taylor Drug Co., *Washington*
Joe Atwater, *Nashvillle*
Laurie Austin, Kerr Drugs, *Chapel Hill*
Darrell Avery, Wilson Drug Co., *Wilson*
Deborah Baker, Carolinas Med. Ctr.,*Charlotte*
Dawn Baucom, Kerr Drug, *Charlotte*
Dennis Bean, Cabarrus Memorial Hospital, *Concord*
Barbara Bishop, Undecided, *Mathews*
Steven Bridges, Kerr Drug, *Cary*
Lori Britt, *Selma*
Laura Brown, MUSC Pharm.D. Program
Steven Buckner, *Brevard*
Wendy Burkot, Revco, *Wilson*
Daphne Chesson, *Chapel Hill*
Leslie Clark, Eckerd Drug Co., *Chapel Hill*
Kimberly Clifton, Medical Center Pharmacy, *Smithfield*
David Collins, *Greensboro*
Ray Courtney, Walgreen's, *Jacksonville, FL*
Anita Creech, Campbell U. Pharm.D., *Buies Creek*
Benjamin Cutrell, Undecided, *Carrboro*
Vinay Dakoriya, K-Mart, *Thomasville*
Harry Dover, Undecided, *Chapel Hill*
Sarah Eckel, Hershey Medical Ctr., *Hershey, PA*
Michelle Edwards, Nash General Hospital, *Rocky Mt.*
Monette Elaine, *Chesapeake, VA*
Julie Forehand, Mast Drug, *Oxford*
Lynda Frazier, Revco, *Oxford*
Natalie Gall, Eckerd Drug Co., *Blowing Rock*
Leslie Gardner, *Newport News, VA*
Sherri Garren, Kerr Drug, *New Bern*
Susan Geer, Carolinas Medical Ctr., *Charlotte*
Siretta Gibson, Eckerd Drug Co., *Charlotte*
Susan Green, Eckerd Drug Co., *Asheboro*
Jill Greene, *Thomasville*
Susan Gupton, Wes-Mor Pharmacy, *Morganton*
Nicki Guy, Eckerd Drug, *Kinston*
Sarah Hagan, *Springfield, VA*
Katheryne Hamilton, *Jacksonville*
Jannette Harrell, Siprock IHS Hospital, *Shiprock, NM*
Thomas Harris Jr., Carolinas Medical Ctr., *Charlotte*
Rebecca Heavner, Kerr Drug, *Greensboro*
James Hiatt, Eckerd Drug Co., *Burlington*
William Hollamon Jr., *Yanceyville*
Curtis Holleman Jr., Elliot's Pharmacy, *Fuquay-Varina*
Jerry Hopkins, *Reidsville*
Pamela Hoppers, Revco, *Mt. Airy*
Gina House, *Dunn*

Marcus Hughes, Revco, *Asheville*
Sherry Hunt, Wal-Mart, *Rentz, GA*
Joanne Hunt, Revco, *Williamston*
Leigh Jackson, *Burlington*
Dawn Jackson, Eckerd Drug Co., *Charlotte*
Anthony Jarman, Kerr Drug, *Jacksonville*
Donna Johnson, *Siler City*
Christopher Johnson, Revco, *Denver*
Benny Jones, Kerr Drugs, *Raleigh*
John Kaylor, *Gastonia*
Lisa Kearns, *Denton*
Wonni Kim, *Fayetteville*
Kathleen Knebel, *Lenoir*
Kimberly Lant, *Lincolnton*
Mary Leggett, UNC Hospitals , *Chapel Hill*
Melanie Levin, Eckerd Drug Co., *Charlotte*
Jill Mabe, Revco, *Lexington*
Elizabeth Meade, *Greensboro*
Jodie Miller, Eckerd Drug Co., *Charlotte*
Robert Mitchell, Presbyterian Hospital, *Charlotte*
Tonya Morgan, *Durham*
Ashley Morris, *Wilmington*
Shelley Myott, Kerr Drug, *Charlotte*
Mahmoud Nasiri, *Chapel Hill*
Mary Nethcutt, Eckerd Drug Co., *Charlotte*
Jeffrey New, Revco, *Monroe*
Pamela New, Revco, *Monroe*
Susan Nieden, Revco, *Charlotte*
Jennifer Pare, Medical Center Pharmacy, *Concord*
Lynn Park, *Boone*
Nila Patel, *Ridgeway, VA*
Susan Pendse, Eckerd Drug Co., *Charlotte*
James Phipps, *Crumpler*
Robert Plemmons, Revco, *Denver*
Elizabeth Price, *Lucama*
Anne Marie Ravenna, Eckerd Drug Co., *Charlotte*
Eric Richards, Cabarrus Memorial Hospital, *Concord*
Robert Robbins, Kerr Drug, *Tarboro*
Willaim Roberts, Baptist Hospital, *Winston-Salem*
Lisa Roberts, Revco, *Winston-Salem*
Teresa Robertson, *Lenoir*
Benjamin Robertson, Walgreen's, *Nashville, TN*
James Robertson, Rite Aid, *Enfield*
James Rourk, Revco, *Greensboro*
John Rublein, UNC Hospitals, *Chapel Hill*
Christy Safrit, *Rockwell*
Pandora Sanders, *Smithfield*
Michael Schilke, Duke Medical Center, *Durham*
Brenton Sharpe, NC Baptist Hospital, *Winston-Salem*
Beth Shearer, *Charlotte*
Susan Shumate, *Salisbury*
Michael Skertich, Eckerd Drug Co., *Durham*
Kelvin Sloan, *Charlotte*
Melanie Smothers, K-Mart, *Greensboro*
Mark South, Drug Emporium, *Raleigh*
Christine Teague, Medical College of Virginia, *Richmond, VA*
Alisa Thomas, Eckerd Drug co., *Charlotte*
Wendy Toler, National Inst. of Health, *Bethesda, MD*
Mark Tompkins, Undecided, *Deep Gap*
Karen Torrence, Eckerd DrugCo., *Cornelius*
Janice Underwood, Eckerd Drug Co., *Greensboro*
Harold Usher Jr., UNC Hospitals, *Chapel Hill*
Bridfit Walker, Duke Med. Ctr. Pharmacy, *Durham*
Martha Wall, Eckerd Drug Co., *Winston Salem*
Richard Wallace, Eli Lilly and Co., *Arden*
Susanna Wallace, Danville Memorial Hospital, *Danville, VA*
Cale Watts, Cornwell Drug, Inc., *Stanley*
Beth Webster, Hardin's Drug, *Kings Mountain*
Serena Westmoreland, NC Baptist Hospital, *Winston-Salem*
Michele Wilson, Walgreen, *Wilmington*
Christina Wright, *Ft. Wayne, IN*
So Yon Yu, Undecided, *High Point*
Alisha Zygmuntowicz, *Salisbury*

**This information was current as of May, 1991.*

Pharmacy Foundation of North Carolina, Inc.

This year marks the 44th year of the Foundation's operation. It also marks the preparation for a significant change for the coming year. The changing environment in which the Foundation functions has led the Foundation, with concurrence from the Executive Committee of the NCPhA, to reach an amicable separation of the two organizations, It is, therefore, with a degree of sadness that this will be the last report of the Foundation to this Convention as an official member of its family. The four new Directors you elected this year are William Edmondson, Pam Joyner, Whit Moose, and Artemus West. They will serve their full four-year terms which expire in

1994. This change will allow the Foundation to select over time a number of non-pharmacy directors who can enhance its operations.

The elected officers for the year are President Ralph P. Rogers, Jr.; Vice President Jimmy Creech; and Secretary Tom Miya. The Executive Committee, the Directors and their tenure are listed below.

Paul G. Bissette Jr.	1992
Banks D. Kerr	1991
C. D. Blanton, Jr.	1990
W. Whitaker Moose	1994*
E. A. Brecht (deceased)	1991
Ralph P. Rogers Jr.	1991*
Ronny Buchanan	1993
C. Louis Shields	1993
Laura G. Burnham	1993
W.J. Smith	1991
James L. Creech	1992*
Mitchell W. Watts	1992
Harold V. Day	1991*
W. Artemis West	1994
William H. Edmondson	1994
Lloyd M. Whaley	1993
Sara J. Hackney	1990
Josiah R. Whitehead	1992
Robert B. Hall	1993
William H. Wilson	1992
John C. Hood	1993
Barney Paul Woodard	1992
Pamela U. Joyner	1994
Frank F. Yarborough	1991

Tom S. Miya - Secretary*
Mescal Ferguson - Honorary Director

*Executive Committee Member

During the year the Foundation lost its Vice President, Edward A. Brecht, the first secretary (1946) of the Foundation. The Foundation also lost a dear friend and past Director, Hoy Moose. They will be remembered for their significant contributions to the Foundation.

On June 30, 1990, the assets of the Foundation reached $3,500,000 and including unitrust agreements exceeded $4M. A significant portion of the endowed assets are restricted, such as the Fonnie Jackson Andrews and Howard and Mescal Ferguson funds.

Receipts during FY 1989-90, ending June 30, 1990, included $137,919 for endowment and $83,220 for expendables for a total of $221,139. The Directors, faculty and alumni are included in those supporting the foundation. The growth of the foundation occurs from prudent expenditures and investments through the University of North Carolina Investment Fund. The expenditures from the Foundation for FY 1989-90 were approximately $133,000 and are expected to be approximately $16,000 during FY 1990-91. The Foundation has been a significant source of support to the School of Pharmacy during severe budgetary constraints.

The Foundation will be facing the challenges of change during the immediate future. President Ralph Rogers has asked to be relinquished from his post, and I will be relinquishing my post as Secretary concurrent with my retirement in July 1992. These events, together with a possible new relationship with the UNC School of Pharmacy Alumni Association, will require much attention. Both President Rogers and I pledge to be as helpful as we possibly can during this transition.

Tom S. Miya, Secretary

Annual Report of the UNC School of Pharmacy ASP Chapter

For the students involved with the UNC chapter of the Academy of Students (ASP) of Pharmacy, this year has been a busy and productive one. We started the year the day before classes began in the fall with the annual ASP picnic. This is the first opportunity each year for the entire student body of the pharmacy school and the faculty to get together informally for a cookout and volleyball. Directly following the fun, we began our membership drive which recruited more than 300 students, roughly 60-65% of the student population.

Our major project this year was an extension of our drug abuse prevention program. For those of you unfamiliar with the program, it consists of groups of pharmacy school students performing site visitations at elementary schools in the area to not only "Say No To

EDITORIAL NOTE

- Additional Convention Reports and Convention pictures will appear in the next issue of *The Journal.*

- Due to the copious amount of material in this issue of *The Journal*, the management article series by Dr. Curtis P. McLaughlin and "Dickinson's Pharmacy" by Jim Dickinson are not included. These features will resume in next month's issue.



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Drugs," but also to explain *how* and *why* to say NO. Our program visited at least five schools this year, covering two or more classes per school. Unfortunately, the site visitation program is limited by distance and scheduling, and we cannot cover as great an area as we would like. Thus, we applied for and received a Merck Grant to develop a videotape. The tape is a puppet show in which various body organs convince the young boy in which they live of the dangers of drug abuse via a rap song. The video really speaks for itself and information regarding the video can be obtained through the UNC ASP chapter or through the Office of Student Affairs at the School of Pharmacy.

At the regional level, our chapter hosted the ASP midyear Regional Meeting at Research Triangle Park. Our own Betsy Meade served as the coordinator for this event and Al Mebane spoke at a luncheon sponsored by NCPhA. Nationally, we had 25 students from our chapter attend the APhA convention in New Orleans. At the convention, our contestant, Martha Wall, was named the National Patient Counseling Competition Winner. She competed against 70 finalists who each had won the preliminary competitions at their schools. Our chapter also received a certificate of recognition for chapter achievement at this convention.

Our chapter has also continued other ongoing projects. We held three screening clinics this year which included blood glucose, cholesterol , and blood pressure testing. We had a program highlighting the NPC Internship Program with representatives from Burroughs-Wellcome and Glaxo. Eli Lilly brought a presentation to us and also sponsored a pizza party. We conducted a workshop that focused on leadership, communication skills, and cooperation. Al Mebane also came to install our new officers at the end of the fall semester.

Our pre-pharmacy club has elected officers and has begun holding bi-weekly meetings in order to establish better membership. Meanwhile, the active ASP chapter has recently established a "Student Member of the Month" program to recognize hard workers as well as to increase participation from less active members. Our chapter has also provided the service of having copies of composite pictures made for interested alumni who had not previously been able to get them. We expanded our professional services by joining with the Durham-Orange Pharmaceutical Association to work at a health fair at Northgate Mall in Durham. We provided drug information, teaspoon measurement and "brown bagging" services where we could help people better understand their current medications and dispose of outdated ones. We have also initiated a new project in conjunction with our Pharmacy School Senate to begin a yearbook for the school. The target is to have the first issue out next year.

The ASP chapter at UNC would like to thank all the faculty and staff of our school and those at the North Carolina Institute of Pharmacy for all they do to help us. We could not have accomplished all of this without them!

Julie A. Haizlip, President

A NEW MISSION FOR NC PHARMACY

The work of the Pharmacy in the 21st Century (P21) — NC Commission over the past year culminated at the 111th NCPhA Annual Convention, May 22-25, 1991, when Chairman William H. Edmondson introduced the new mission for NC Pharmacy (see cover) and the accompanying "Declaration of Intent" below:

"The intent of this new mission statement for pharmacy in NC is to provide a direction for pharmacy in the coming decade.

All NC pharmacists are encouraged to adopt and put into action the modern concept of pharmaceutical care.

This mission statement charges all elements of the profession to unite in pursuing this objective."

Comprised of pharmacy leaders from representative practice areas, the P21-NC Commission was charged with having consensus on a mission for NC pharmacy following the "Pharmacy in the 21st Century: Is NC Ready" Conference held in May, 1990. The Conference was designed to focus attention on critical issues confronting the profession. •

WHEELER NAMED NC DISTINGUISHED YOUNG PHARMACIST

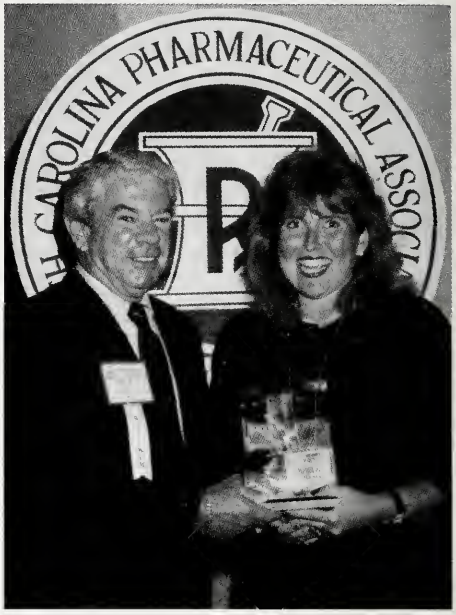
Rebecca Ann Wheeler, Charlotte, has been named the 1991 Distinguished Young Pharmacist of the Year in North Carolina at the opening session of the Annual Convention of the NCPhA in Winston Salem. The award, sponsored by Marion Merrell Dow, Inc., is presented annually to a pharmacist who has been licensed for ten years or less and has exhibited excellence in professional practice and a high level of participation in local and state association activities.

The presentation was made by the originator of the award, Robert E. Slater, Director of Pharmacy and Trade Relations for Marion Merrell Dow, Inc. The selection of the award recipient was made by the Executive Committee of the NCPhA.

Since graduating from the UNC School of Pharmacy in 1985, Wheeler has been active in pharmacy and community affairs at the local, state and national level. She recently was chosen as one of a select number of pharmacists to participate in the William S. Apple Memorial Program in Community Pharmacy Management sponsored by the American Pharmaceutical Association

Until recently, she lived in Raleigh where she served as president of the Wake County Pharmaceutical Association, and pharmacy manager of Kerr Drug Store in Cameron Village. She has been a delegate to the APhA House of Delegates from North Carolina, and a preceptor in the UNC School of Pharmacy Academic Internship Program. She is in her second year as co-chairman of the NCPhA/NCSHP Pharmacy Week Committee

Wheeler is employed as pharmacy manager of Charlotte Pediatric Pharmacy.



Bob Slater and Rebecca Wheeler during the award presentation. *Photo by Qualex*

BURROUGHS WELLCOME CO. ANNOUNCES 1991 PHARMACY SCHOLARSHIP PROGRAM

Philip R. Tracy, President and CEO of Burroughs Wellcome Co., announced the continuation of their Pharmacy Scholarship Program through 1991. Pharmacists from across the country will be asked to indicate on entry forms their choice of recipients from among six national pharmacy organizations' educational foundations and the 74 schools of pharmacy. Since the program began eighteen years ago, Burroughs Wellcome has contributed over $2,300,000 to pharmacy education in this manner.

This year $156,000 will be distributed as a result of the drawing on August 20, 1991, at the company's Research Triangle Park headquarters. All post cards must be received by August 8, 1991 to be eligible for the drawing. Three cards from each state, the District of Columbia and Puerto Rico will be selected, and the pharmacists submitting those cards will receive an inscribed plaque indicating they were a winner, and each pharmacist who sends in an entry card will receive a replica of a 17th century pill tile. Be sure and submit your entry to support this excellent program.

DUNLAP RECEIVES THE BOWL OF HYGEIA AWARD
MAST IS RECIPIENT OF THE DON BLANTON AWARD

Henry H. Dunlap, Siler City, was the 1991 recipient of the Wyeth-Ayerst "Bowl of Hygeia Award" presented at the Annual Convention of the North Carolina Pharmaceutical Association. The award was made by Wyeth-Ayerst District Manager Olin H. Welsh.

Dunlap was chosen for outstanding community service. A native of Chatham County, he has served on the county board of commissioners since 1974, many years as its chairman. He has served as president of the Rotary Club, director of the Chamber of Commerce, a Mason and a Shriner, and a member of the Moose Lodge. He owned his own store in Siler City and currently is employed by Mast Drugs.

Besides the plaque, Dunlap will receive a trip to Philadelphia in the Fall, where he will meet the other award recipients from across the country and be the guest of Wyeth-Ayerst for several days.

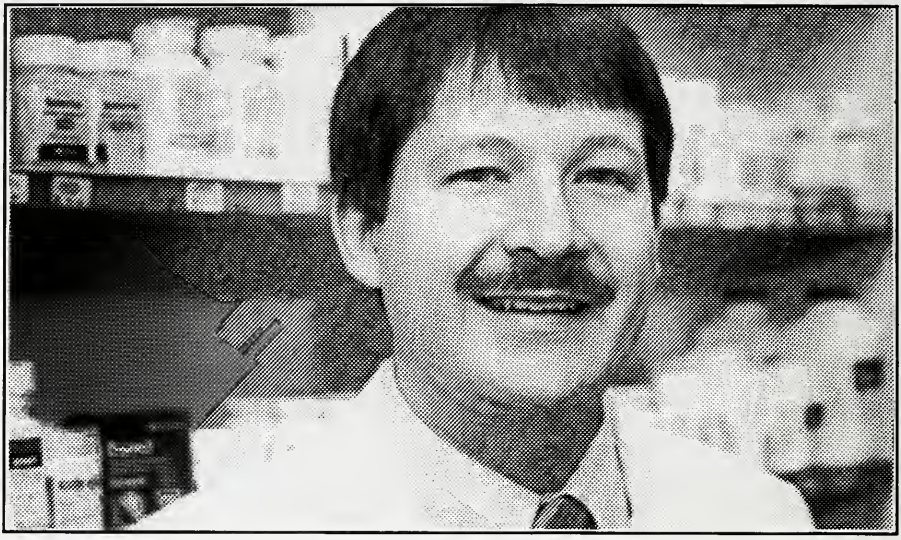


Olin Welsh, *left*, and Henry Dunlap, and Henry's Bowl of Hygeia plaque.
Photos by Qualex



Charles Blanton, *left*, congratulates Bill Mast of Henderson, recipient of the Don Blanton Award. The presentation was made at the Annual Convention of the NCPhA in Winston Salem. Mast was chosen for his untiring efforts to promote the value of pharmacist services and adequate reimbursement for these services.

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Pharmacies For Sale

PHARMACY FOR SALE: Don't miss an exceptional opportunity to become your own boss in a professional atmosphere. An established prescription-oriented pharmacy located in the Winston-Salem area is offered for individual ownership. This opportunity will allow you the freedom to cut your hours, spend evenings, Sundays and holidays with your family and to practice your profession the way you were taught. For detailed information, call John Aumiller 800-325-1397.

BE A PART OF THE RELAXED COMMUNITY OF ORIENTAL (located on the Neuse River). Looking for someone to lease a pharmacy in a newly constructed building containing a doctor's office and a dentist's office. Great retirement community. Many options available. If interested contact Wayne Wilkinson, Wilkinson Realty & Construction Inc., P.O. Box 589, Oriental, NC 28571; 919-249-2121.

FOR SALE: Drug store in Piedmont NC. For price of inventory only. Respond to Ad: SAP, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. A.S.A.P.

Community Pharmacist Positions

PHARMACISTS WANTED: Kerr Drug Stores has positions available for pharmacists in some of our locations in North Carolina. Kerr Drug offers opportunity for growth into store management. Excellent benefits. Send resume to: Jimmy Jackson, Director of Pharmacy Services, P.O. Box 61000, Raleigh, NC 27661 or call 919-872-5710.

PHARMACIST OPPORTUNITIES: Excellent environment in which to demonstrate professional skills. Positions available for the very best in many locations in the Carolinas. Excellent compensation and benefit programs including generous bonus and profit sharing. Send resume to Nick Martino, Eckerd Drug Co., P.O. Box 31243, Charlotte, NC 28231, or call 704-371-8242.

PHARMACIST WANTED: Mature, permanent, full-time with management experience for busy independent. (No sundries in stock; only medical necessities.) No nights or Sundays. Eventual ownership possible. Fayetteville: 919-484-6214.

PHARMACIST WANTED: Join a leader in long-term care pharmacy. Applications now being accepted for staff position. Excellent hours, above average compensation package, hospital background helpful. Send re-

sume to: Pharm-Save Inc., P.O. Box 1377, Kinston, NC 28501, Attention Skip Sykes.

Relief Pharmacist Positions

PharmaSTAT Inc., PHARMACY RELIEF SERVICES: Pharmacists available statewide for your pharmacy needs, 800-252-STAT.

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RELIEF PHARMACIST AVAILABLE: Will travel. Contact Albert Clay, 8009 Kensington Dr., Fuquay Varina, NC 27526; 919-552-2838.

RELIEF PHARMACIST AVAILABLE: Retiring pharmacist; NC and SC license. Seeks regular relief work on a permanent basis, if possible in metropolitan piedmont area. Call 704-455-9290.

Miscellaneous

FOR LEASE: Recently vacated Eckerd Drug Store; 8519 sq. ft. in Murdock Center. SE corner of Roxboro Rd. and E. Club Blvd., Durham, NC. Traffic counts over 45,000 ADT. Contact Rosamond Property Co.: 919-779-7737.

DOCTOR OF PHARMACY (PHARM.D.): Would you like to obtain a Pharm.D. degree? If you are a recent B.S. Pharmacy graduate, contact the Director of Admissions, Campbell University School of Pharmacy, Buies Creek, NC 27506 or Call 800-334-4111, Ext. 3101.

NC PHARMACIST seeks retail position in the Fayetteville area. Would like to be part of a challenging professional environment with growth potential. Reply to ad GAC, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

WANTED: Pharmacist to work in a new field of dispensing drugs. Fresh ideas on distribution, working hours and pay. Send resume to: Ad RBI, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514, and state when you can be interviewed.

FOR SALE: Scottman flake ice machine. Used only 4 months; still under warranty. Makes 400 lbs. of ice daily—$1600. Contact Harry Stone, P.O. Box 1963, Salisbury, NC 28144; 704-636-0680.

FOR SALE: Autocall 20-key POS Terminal, 2 line, 20 character display, built-in modem. For PCS on-line adjudication. Originally purchased at $660, will sell for $225, due to independent pharmacy going out of business, 919-824-4034.

Want a charcoal sketch of yourself? Satisfaction guaranteed. Send only $20 and a picture to Betsy Clinard, 1609 Emorywood Dr., Charlotte, NC 28210.

NEW MISSION STATEMENT FOR NC PHARMACY: (See pp. 5, 21, and 35 of this journal issue.) An 8 x 10 inch copy of this important statement suitable for framing may be purchased for $2 from the NCPhA office. The mission statement is inscribed on 65-lb. document paper with a green screened image of the state of NC in the background. The "Declaration of Intent" is also included on the back. NCPhA hopes that all of its members will feel compelled to put this on their walls and begin to consistently provide *pharmaceutical care.* Make checks payable to: NCPhA, P.O. Box 151, Chapel Hill, NC 27514. •



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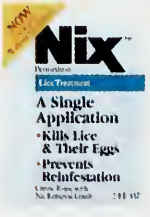
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NCPhA Office
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PRESIDENT'S PAGE

PATIENT COUNSELING — OUR PROFESSIONAL RESPONSIBILITY



Betty H. Dennis, NCPhA president

The future of pharmacy practice will be determined by the responsibilities we assume for assuring optimal therapeutic outcomes of drug therapy. Patient counseling is one such responsibility.

The National Council on Patient Information and Education (NCPIE) has advocated some basic questions that all patients should ask about any medication they receive. Knowledge about medications has been incorporated into several "Wellness" programs offered by major industries and employers as a method to maintain good health by improving compliance with drug therapy.

It is our responsibility as professionals to make sure each patient who receives a medication from us has adequate information to understand why the medication is needed and how to properly use the drug. We can accomplish this by committing to counsel each patient with the following information:

- the name of the drug and what it is supposed to do;
- how and when to take the drug;
- what to do if a dose is missed;
- how long to take the medication;
- what foods, drinks, other medications or activities to avoid while taking the drug;
- possible side effects and what to do if they occur; and
- proper storage requirements.

Assistant Surgeon General and Chief Pharmacy Officer of the U.S. Public Health Service, pharmacist Richard Church, is encouraging the use of an extensive patient counseling program used in the Indian Health Service. It is recommended that patients be asked open-ended questions such as:

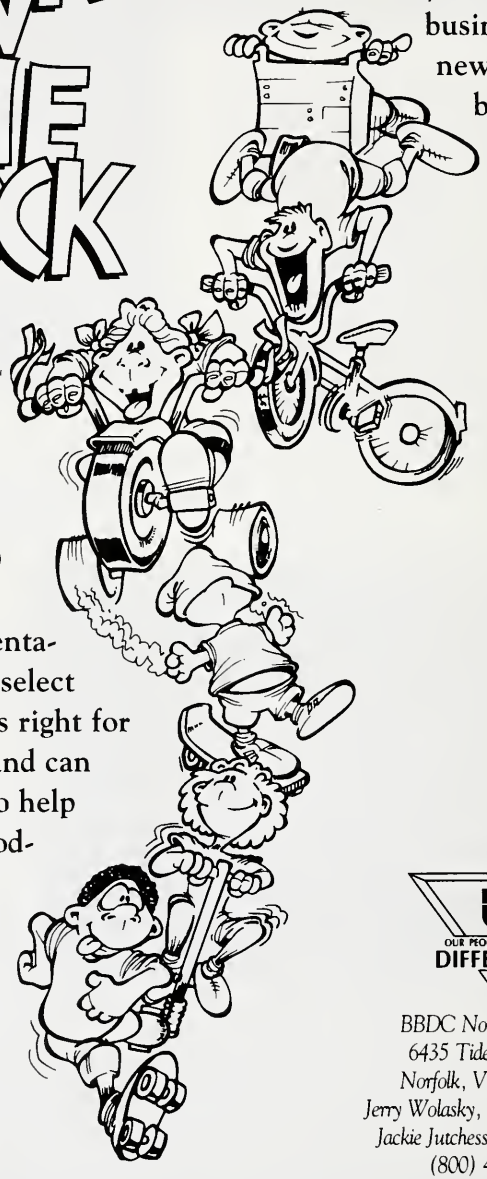
- "What did the doctor tell you this is for?"
- "How did the doctor tell you to take this medication?"
- "What do you think of this new medication?"
- "How have you been feeling?"
- "Just to make sure that I did not forget to tell you anything important, will you go over how you are going to use the medication?"

This approach with "how" and "what" questions makes the patient more comfortable if they have not remembered or received the information needed to take their medication correctly.

October is *"Talk About Prescriptions Month"* and patient communication will be a focus of a statewide "Brown Bag Program" that NCPhA is sponsoring during this annual event. Patients will be encouraged to gather all of their medicines in one bag and take them to their local pharmacist for review. Full details of this program will be provided in the next journal issue.

Let's start preparing ourselves now! •

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WHAT IS AN S CORPORATION?

A potential benefit for new and existing small business corporations

This is the first in a series of bimonthly articles concerning general legal topics. The articles will be prepared by Bailey & Dixon — a Raleigh law firm which provides comprehensive services in administrative law, litigation, government relations, and commercial transactions. The Journal welcomes your suggestions of topics for future articles.



Cathleen M. Plaut, J.D.

The Internal Revenue Code allows a qualifying small business corporation to be taxed essentially as a partnership if the shareholders elect "S Corporation" status. It is generally advantageous for new corporations, including pharmacies, to make the S election if they are eligible.

Eligibility for S Corporation Status

Not every corporation can be an S Corporation. If an eligible corporation makes an S election, the corporation should be monitored to ensure it retains its eligibility. The following are eligibility requirements for S Corporations.

1. Only domestic corporations are eligible. A domestic corporation is one that is created in the U.S. or under the laws of any state. Foreign corporations do not qualify, even though they may have assets or do business in the U.S.
2. The corporation must have no more than thirty-five shareholders. In determining the number of shareholders, a husband and wife may treated as one shareholder.
3. Each shareholder of an S Corporation must be either an individual, an estate, or a certain type of trust. Partnerships and corporations cannot normally own stock in an S Corporation.
4. Non-resident aliens may not own stock in an S Corporation.
5. An S Corporation can have only one class of stock. Such stock may have differences in voting rights, but all shareholders must have the same rights to profits, dividends, and any distributions upon liquidation of the corporation.
6. An S Corporation may not own 80% or more of the voting power and value of another corporation.

Election of S Corporation Status

In order to elect S Corporation status, Internal Revenue Service Form 2553 must be completed and filed in a timely manner. All shareholders must sign and date the form, and the timing of the filing is critical. For new corporations, Form 2553 must be filed on or before the 15th day of the 3rd month from the date the corporation first has shareholders, acquires assets, or begins doing business. Once a corporation has elected S status by filing Form 2553, the election does not need to be renewed and remains in effect until revoked or terminated.

Advantages of S Election

Ordinarily, corporations and their shareholders incur two rounds of tax before the earnings of the corporation reach the shareholders. The first round of tax is an income tax imposed upon the corporation's earnings. The second round of tax is imposed upon the

CATHLEEN M. PLAUT is an associate with the law firm of Bailey & Dixon in Raleigh.

shareholders who receive distributions of the corporation's earnings in the form of dividends. If a corporation such as a pharmacy is an S Corporation, only *one* round of tax is imposed upon the corporate income and the distribution of that income to the shareholders. An S Corporation's "taxable income" is determined and then passed through to the corporation's shareholders. Generally, S Corporations are exempt from all taxes, and the corporation's income is reported by the shareholders on their individual tax returns.

If an S Corporation incurs a loss, the shareholders may use their pro rata shares of the loss as deductions on their individual tax returns. The amount of the deduction, however, is limited to the adjusted basis of the shareholder's stock, plus the adjusted basis of any loans made to the corporation by the shareholder. If the pro rata share of the loss exceeds the shareholder's tax basis in stock and loans, the excess loss is carried forward and that shareholder is permitted to deduct the loss in succeeding tax years.

In most instances, the S election results in a reduction of the overall tax burden to the corporation and its shareholders. Although there are special considerations when an existing corporation converts to an S Corporation, all new and existing small business corporations should investigate the potential benefits of an S election. •

October is "Talk About Prescriptions Month"

Look in the mail for your NC Pharmacy Brown Bag Days Kit which describes details of the 1991 campaign.

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DICKINSON'S PHARMACY

"Pharmacists are invited to submit to the FTC cold, hard evidence of price discrimination — such as special price breaks given by drug companies to mail-order companies that may not be justified by volume."

FTC on your side. It's been a long, cold winter for pharmacy at the Federal Trade Commission, but if its new general counsel can be believed, a thaw is here.

James M. Spears told NARD's annual legislative conference in Washington at the end of April that FTC is ready to spend some of its scarce enforcement dollars in the area of the Robinson-Patman Act (predatory pricing).

"We're looking for cases," he told NARD, inviting pharmacists to submit cold, hard evidence of price discrimination — such as special price breaks given by drug companies to mail-order companies that may not be justified by volume.

"We need to work together," he said, cautioning that "anecdotal data won't help."

This is a big turnaround for FTC, considering that NARD has been treated like a voice howling in the wilderness there for at least 20 years, on Robinson-Patman.

It's part of a Bush Administration reversal of most of the laissez-faire policies of the Reagan era.

While it's too early to be confident how far this change of heart will be allowed to go before the big-money friends of the Republican Party start funding next year's elections with strings-attached contributions, this turn of events is something pharmacy should ride till it stops.

Spears is a young, ambitious lawyer who is anxious to make his mark.

The Bush Administration shows every sign of wanting that mark to be visibly pro-consumer before the Democrats start getting really mean next year.

What could be more pro-consumer in this health-conscious age than giving the corner drugstore back to America?

Nobody ever turns the clock back in a strict sense, of course — but neighborhood pharmacies in new roles can make a comeback. What goes around, comes around.

If the FTC is looking for price discrimination evidence against mail-order companies (and others) — every pharmacist should help find it.

Spears' between-the-lines message is that the Commission has money for good court cases, but not much for investigative spadework. It can't send detectives out to go through drug company trash cans and sit 24-hours a day on phone taps, just in the hope that there is substance to gossiped allegations.

What it needs more of is the hard, printed proof that comes from misdirected invoices — like the Abbott invoice to Medco that leaked by accident to a New York wholesaler, who in turn handed it over the local pharmacy buying group.

Who in turn made enough of a political

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy— The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

ruckus in pharmacy circles to cause Abbott to reconsider its policy terms and make itself available to pharmacy buying groups.

None of this is as easy as skimming this column and putting it aside to fill the eight prescriptions that may be waiting.

If pharmacy is to lift a finger in its own defense, and to take advantage of the slightly opened chink in the FTC's armor, then pharmacists need to get on the phone to other pharmacists, and to wholesalers and buying groups, and put on a vigorous search for the kind of evidence that Mr. Spears is asking for.

Do it now. Don't wait until you have the time. In the real world, that never happens!

Because they're staffed by employees who are just ordinary human beings — some good, some not — big, fat, successful drug companies have clerks that now and again will send out the wrong invoice, in the wrong envelope, to the wrong person.

Invoices will sometimes stick together by static electricity — two in the same envelope.

It's happening all the time.

When these mistakes are discovered, other clerks who don't give a hoot about pharmacy just quietly correct and cover up the mistakes.

It's happening all the time.

But if energized pharmacists keep up a loud and vigorous hunt for these mistakes, calling people every week (what does a two minute long-distance call cost, anyway?), somewhere somebody will get sensitized.

If so, Mr. Spears will get his evidence. Send it to him at the Federal Trade Commission, Room 570, 601 Pennsylvania Avenue, N.W., Washington, D.C. 20580 (phone 202-326-2480). Send me a copy, too.

Then, in conjunction with the other things that are going on — such as legislation to break the insurance exemption from the antitrust laws, and action to force discounts for Medicaid from drug companies — discriminatory pricing can become a thing of the past.

And the heyday of the neighborhood pharmacy can return. It won't be easy, and the "other guy" probably won't do it.

Try it. You'll like it! •



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T/O = Transfer of Ownership
LSP - Limited Service Permit

NEW DEFINITION OF MEDICAL DEVICES RATIFIED BY' 91 GENERAL ASSEMBLY

Section 1. G.S. 90-85.3(e) of the NC Pharmacy Practice Act, which defines a medical device, was rewritten and ratified by the 1991 session of the NC General Assembly on July 8, 1991. The bill was introduced as Senate Bill 742, "An Act to Amend the Regulation of Medical Devices by the State Board of Pharmacy," and was approved as follows:

"(e) 'Device' means an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar or related article including any component part or accessory, ~~that is required by law to be dispensed only pursuant to a prescription order~~ *whose label or labeling bears the statement: 'Caution: federal law requires dispensing by or on the order of a physician.' The term does not include:*

(1) Devices used in the normal course of treating patients by health care facilities and agencies licensed under Chapter 131E or Article 2 of Chapter 122C of the General Statutes.

(2) Devices used or provided in the treatment of patients by medical doctors, dentists, physical therapists, occupational therapists, speech pathologists, optometrists, chiropractors, podiatrists, and nurses licensed under Chapter 90 of the General Statutes provided they do not dispense devices used to administer or dispense drugs."

Section 2. This act is effective upon ratification.

G.S. 90-85.3(e) was rewritten to clarify the confusion generated by the original definition of medical devices approved by the General Assembly in 1990.

Note: Chapter 90 of the General Statutes (G.S. 90) contains laws pertaining to medicine and allied health occupations, which includes the "NC Pharmacy Practice Act." Chapter 131E pertains to health care facilities and Article 2 of Chapter 122C, mental health facilities." •

PERIODIC SHIPMENT INVENTORY SYSTEMS

A logical imperative for the retail drug industry

This is the eighteenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Most retail replenishment systems today are not based on the reorder point and safety stock system cited in our most recent article.[1] Most retail chains depend on a variant of that system which arranges for *periodic shipment* of a number of requested items in a single prescheduled shipment.

The reorder point system assumes unrealistically that the ordering of one item is independent of the ordering of any others, and ignores the realities of minimum freight charges and other costs that favor pooled shipments. (Pooled shipments lower costs associated with ordering, order processing, shipping, receiving and stocking.)

Retail chains behave the way my mother conducted her grocery shopping when we had no car during the Depression and World War II. The retail chain sends out only a few truckloads a week with a nearly full load each time. Efficient truck routing and ordering call for this to be done on a scheduled basis, usually on the same days each week. Similarly, my mother took the bus to the big A&P downtown which she felt had the lowest prices. She would buy a week's supply of groceries and then call a cab to truck it all home.

Strengths and Weaknesses

The primary advantages of a periodic shipment system (also called periodic review system) are that it reduces shipping costs and can be used to relieve management of a continuous concern with inventories. For this system to work successfully, it must gauge how much of an item is on hand at the *reorder time* and have an estimate of how much will be demanded between the reorder time and the time that the next order will be placed *and* received. With a periodic shipment system, the safety stock must be large enough to cover the variability in demand over a much longer period of time — the time between orders *plus* the delivery lead time. With a reorder point system, however, the safety stock must be sufficient to cover only variations in demand until the *current order* is *received.* Therefore, the negative side of a periodic shipment system is that it requires more safety stock than reorder point systems.

Modern point-of-sale (POS) devices have made periodic shipment systems even more responsive by collecting data on sales instantaneously. If data are available on initial stock levels, sales can be subtracted to estimate current stock levels. Electronic devices can also

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

be used to enter current stock levels to a disk or cassette to be transmitted to the warehouse to help calculate estimated requirements.

Centralized Inventory Decisions

Some chain jewelry stores have used the data from customer sales slips to determine what has been sold and what is to be included in the next shipment. One copy of the sales slip which includes the stock number is sent to headquarters. The main objective is to give top management more timely data for merchandising decisions. As items are sold, they can be replaced on a one-for-one basis in the next scheduled shipment since high security risks and associated shipping costs preclude frequent shipments. Top management argues that this system relieves the store managers of any inventory management tasks and leaves them free to concentrate on direct selling and credit decisions. Also, store managers need less across-the-board training and no training on merchandising is necessary.

Such systems work all right, but are subject to problems due to delays in the mail and in data entry. Newer POS devices have speeded up the data entry; electronic data transmission from the store to the warehouse has removed potential problems with data entry and the mail. *Barcode* readers have also made data entry, as well as pricing, reliable and instantaneous. *Electronic data interchange* (EDI) can move purchase information to the warehouse or plant immediately. These technologies can cut days off the lead times and hence decrease the safety stock requirements.

In the textile industry, this high speed of transmitting sales data has led to a system in which the manufacturers maintain the inventory of towels and washcloths rather than the chains' warehouses, saving the chains investment and material handling costs.

More Advantages to Large Volume Operations

Note how often the word "chain" appears in these real-world illustrations. There are tremendous economies of scale in modern data entry and transmitting schemes, all favoring the largest firms. I recently visited the headquarters of a major manufacturer of branded OTC medicines. There I asked a number of questions about EDI in their business. Fifteen to twenty percent of their order volume came in by wire, all from the big retailers. That was not surprising.

What was surprising, however, were the factors slowing down the adoption of this new technology. The first was the chicken-and-egg nature of technological change in service industries. To move to the next level of system utilization the retailers would have to be willing and able to capture the data and transmit it to the wholesalers, who must be willing and able to transmit it to the manufacturer. Finally, the manufacturer must be willing to process the data responsively. These issues are not new ones.

The banking industry went through the same processes in the 1950s with machine readable check coding. The technology could be applied only after the big banks and the Federal Reserve Clearinghouse decided that this process was the way to go. Then the smaller banks and the check printers had to go along, too. Similar issues arose with the bar coding of grocery items. Only when enough big chains began to demand bar coding, did the manufacturers change their packaging.

Right now in the pharmaceutical industry, the big chain retailers are utilizing POS devices and doing order entry by EDI. If these steps save on inventory and shipping and handling costs, the smaller stores are at a cost disadvantage and will remain so until they band together with suppliers to get these services.

One surprising thing, however, was that the manufacturer did not necessarily process the EDI-submitted order directly. Orders entered through EDI still went through a manual review to double-check the deals and discounts offered by the sales force and/or taken by the customers. For EDI to reach its full potential, however, the pricing and sales compensation systems would have to be simplified.

The Combination Store

The typical drug store — chain or independent — provides a wide range of merchandise, some available in grocery stores and some not. The prescription drug system is computerized for customer and tax records, but has not been made compatible with POS systems. Most stores do not read in bar codes from packaging at any checkout station. The fact that the stores are involved in multiple distribution systems for drug and non-drug items may have held back development of systems to handle the automated coding and stocking of either type of item. While the process of gearing up for the drug information requirements of the "Catastrophic" medicine bill could have provided the impetus for electronic data systems, that died with its repeal. It is likely to be a long time before the industry as a whole gets the full benefits of bar coding and EDI in the retail sector.

Conclusions

Despite the barriers to adopting new technology, periodic shipment schemes are likely to continue to be the primary methods of handling order entry and deliveries well into the future. Rising transportation costs and the need to schedule orders, truck routes, shipping and stocking, and seasonal and promotional merchandising will all make periodic shipments a logical imperative. The reorder point inventory system is not beneficial to a dispersed network of retail establishments. Given the relatively high safety stock requirements associated with a periodic shipment system, the potential for using automated data entry and electronic data transmission to reduce order lead times is substantial. The potential is there for the retail drug industry, but capturing it will take strong industry leadership and the cooperative efforts of retailers, wholesalers and manufacturers.

References

[1]McLaughlin CP. Size and inventory requirements. *The Carolina Journal of Pharmacy*. 1991; 71(6):9-11. •

NC PHARMACISTS FILL APhA BALLOTS

Ballots for the American Pharmaceutical Association's (APhA's) fall elections are weighted with pharmacists from the Tar Heel state. They are:

Running for a 1992-1995 term on the APhA *Board of Trustees* is **Fred M. Eckel**, chairman, Division of Pharmacy Practice, UNC-CH School of Pharmacy.

For APhA's Academy of Pharmacy Practice and Management (APPM), **Albert F. Lockamy Jr.**, regional director of pharmacy affairs, Revco, is a candidate for *Member-at-Large* on the *APPM Executive Committee*.

Dennis M. Williams, clinical assistant professor, Division of Pharmacy Practice, UNC-CH School of Pharmacy, is slated for the *Chairman-Elect* position of the *APPM Clinical/Pharmacotherapeutic Practice* section.

George E. Dukes, clinical associate professor, Division of Pharmacy Practice, UNC-CH School of Pharmacy, is slated for the *Chairman-Elect* position of the *APPM Clinical Sciences* section.

Ballots will be mailed to APhA members in mid-September. •

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USP Says Thank You to the North Carolina Pharmaceutical Association



On March 8, 1991, the North Carolina Pharmaceutical Assoication was presented with a certificate of appreciation in recognition of pharmacists' 20 years of cooperation and support to the USP Drug Product Problem Reporting Program (DPPR). The presentation was made to Al Mebane, Executive Director, by Diane M. McGinnis, Director of the DPPR Program, at the 138th Annual Meeting of the American Pharmaceutical Association in New Orleans.

Through the cooperative efforts of the association and USP over the last two decades, the pharmacists in North Carolina have responded to the need to identify hazardous products and to improve USP drug product standards by reporting to DPPR. Pharmacists in all states have submitted 80,000 drug product problems since 1971 and all state pharmacy associations have played a major role in the Program's success.

In addition to distributing the report forms and publishing the Program's 800-number, the associations have sought to provide feedback and educate pharmacists by reproducing the *USP Drug Product Quality Review* in their publications. The *Review* relates regulations and standards to the most frequently asked questions on drug quality that are received through the Program.

The USP encouraged the associations to carry on their support of the DPPR Program so that pharmacists will continue to impact drug quality into the the 21st century.

THANKS TO OUR CONVENTION SPONSORS AND CONTRIBUTORS!

The following companies provided financial support for speakers and activities which enhanced the educational and social programs of our convention. Please express your appreciation to the representatives of each of these companies and organizations.

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These companies provided gifts, door prizes or other items which help make the NCPhA Annual Convention a memorable meeting. Special thanks to each of them for their generosity and support.

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And special thanks to **American Airlines** in Cary for providing the grand attendance prize this year — a pair of round trip tickets to Nassau, Bahamas. Dan Teat of Campbell University School of Pharmacy, Buies Creek, was the lucky winner!

CONVENTION COLLAGE
















CASINO





















THANK YOU 1991 CONVENTION EXHIBITORS!

A most important component of the NCPhA Annual Convention is the Exhibit Program. Held in the spacious Benton Convention Center, this year's program featured over 40 educational and informative booths. A complimentary "Apron" luncheon was provided by Marion Merrell Dow and an attendance prize — a free registration for the 1992 Convention in Pinehurst, worth close to two hundred dollars — was won by W.P. "Bud" O'Neal. Exhibitors fees help reduce the total cost of the Convention, so please thank them for their participation and support.

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A special feature of the 1991 NCPhA Convention Exhibit Program was the NCPhA exhibit booth, where officers and staff were available to meet with Convention participants.



WA members on tour through Old Salem.



Barney Paul Woodard admires the custom-built birdhouse won by his wife, Anne, *on his right.*



'91-'92 WA Officers: *front row, from left,* Mrs. David Moody Jr., Treasurer; Mrs. Robert Worley, Advisor; Mrs. Jimmy Jackson, 2nd Vice President; *back row, from left,* Mrs. Alan Boyd, Past President; Mrs. A.H. Mebane III, Coordinator; Mrs. Ronald Maddox, President; Mrs. William O'Quinn, 1st Vice President; Mrs. Larry Brown, Recording Secretary; Mrs. W.P. O'Neal, Historian; and Mrs. Fred Eckel, Parliamentarian.



Mrs. Worley receives a silver tray of appreciation from WA members.



Mrs. Lamar Morse Jr. holds the '90-'91 WA fundraising project — a plate bearing the NCPhA coat of arms at a sale price of $25 plus shipping.

WOMAN'S AUXILIARY '91 CONVENTION REPORT

by Mrs. Robert W. Worley, 1990-1991 President

The 64th Annual Convention of the Woman's Auxiliary (WA) of the North Carolina Pharmaceutical Association was held May 22-25, 1991 at the Stouffer Winston Plaza Hotel in Winston Salem. Everyone was greeted by the lovely staff of the Institute of Pharmacy. They also presented us with those long-awaited "goodie bags" from Kendall Drug Company.

Many of our auxiliary members stood ready with their sales expertise to sell raffle tickets and the Coat-of-Arms porcelain plates.

Tracey Smith, Ways and Means Chairman, was not able to attend the Convention due to family illness. Her presence was dearly missed, but her hard work was truly visible.

Although we were unable to have a Waik-A-Thon this year, Tracey and members of the Ways and Means Committee did an excellent job providing us with these fund-raising projects. The porcelain plates project is still ongoing. If anyone would like to purchase a plate, you may contact the Institute and place your order.Your support is greatly appreciated and needed.

There were lots of fun activities going on at the Convention this year. They began Wednesday evening with a reception sponsored by Glaxo Inc. to honor the Presidents of the NCPhA, the Woman's Auxiliary and the Traveling Members' Auxiliary (TMA). This was followed by a delightful banquet. The guest speaker was Randy Kilby who spoke on "A Prescription That Works."

The Hospitality Room was open throughout the Convention. Suzan Maddox, Hospitality Chairman, and her committee welcomed everyone with their gracious hospitality and lots of goodies. Many thanks to all of those who made us feel so welcome.

Thursday morning at 9:30 a.m. a bus was loaded to take us to Old Salem. Everyone enjoyed touring the MESDA, the Museum of Early Southern Decorative Arts, where we all felt like part of a past time and era. Many of the furnishings we saw were over 300 years old. Afterwards, we enjoyed a delicious luncheon sponsored by Burroughs Wellcome Company at the Old Salem Tavern. We began our luncheon with the Moravian blessing. It was a beautiful day to tour the village and shops after lunch. Some even rode the trolley which was a common means of transportation during the time of Old Salem.

Thursday night, everyone was invited to "Casino Night" for a little "bet" of fun. Also, a drawing for prizes was held. The evening concluded with an "Ice Cream Party" sponsored by Burroughs Wellcome for all the "sweet tooths" around.

Friday morning, the table was spread in the Hospitality Room for our coffee hour. The ladies once again outdid themselves.

The 64th Annual Business Session began at 9:30 a.m. with 52 members present. Laveita Brinson gave the invocation followed by a "Welcome" from Past President Mary Garden Dollar.

NCPhA President Frank Burton and TMA President Dick Hoffman brought greetings from their respective organizations.

We were all delighted to hear from Tom Burgiss concerning his bed-and-breakfast business. After listening to Tom, many of us were ready to make reservations or start our own bed-and-breakfast business.

Mrs. Barney Paul Woodard presented memorials in honor of our members who died during the past year — Mrs. Willis (Nell) Holland and Mrs. J.W. (Mary) Darlington.

Each committee chairman then gave their reports. It was noted that we donated $500 to Mission Air. Also, the Vial of Life is still going strong. Our Literacy Project has reached a national level. We have had many calls and letters from people out of state asking for our pictogram poster, "Ask Your Pharmacist."

The Auxiliary awarded six scholarships to UNC-CH pharmacy students this year and one to a Campbell University pharmacy student. We are proud to announce that we reached our goal of $15,000 for the Campbell

University Scholarship Fund. Many thanks to whose who contributed to this fund. We hope that next year we will be able to increase this scholarship even more.

Congratulations to Margaret and Shelton Boyd for being honored as "Outstanding Senior Citizens of Mt. Olive" this year. They have worked tirelessly to help the needy in their community.

We are very grateful for all the wonderful door prizes donated by various wholesalers and companies. These were awarded at the close of the Business Session.

We were proud to have two of our scholarship recipients as pages, Anna Tedder from Greensboro and Allison Clippard from Alexis. Many thanks for their assistance. I don't know what we would have done without them.

Immediately following the Business Session, we boarded the bus to the Forsyth Country Club for our Installation Luncheon and Program sponsored by Glaxo Inc. Mrs. Maxine West gave the blessing. During our meal, we were entertained with a dazzling fashion show by Francine's of Atlanta. Peggy Jackson, Suzanne Bizzell and I felt honored to be models.

Mrs. Alan Boyd conducted a most meaningful installation program for the 1991-'92 officers. The gavel was then presented to the new incoming president, Suzan Maddox. We are confident she will serve the Auxiliary to her best. Let's all give her our full support.

Many thanks to all of you for the silver tray presented to me. It will always bring back the many fond memories during my term as your president.

A special thank you to Mrs. Linda Way who provided us with the many centerpieces used throughout the convention. Her gracious hospitality was truly appreciated.

Friday night, everyone was invited to the Installation Banquet. It was at this time that the new Auxiliary officers were presented. This was followed by a dance sponsored by the TMA, featuring Joyce Hawley and *The Rhythm Section*. During the intermission of the dance, we had our drawing for the raffle prizes. Congratulations to Mrs. Ralph Smith, Jr., who won the $500 cash prize and to all the other winners: Anne Woodard, birdhouse; Beth Bischoff, autographed UNC-CH basketball; Marian Chambers, VCR; Elaine Fuller, $25.00; and Babette Blaug, wine carafe and glasses bearing the commemorative pharmacy stamp.

Saturday morning the officers and past presidents joined together for a Dutch breakfast. Officers shared experiences of their terms of office, along with words of encouragement to the newly installed president, Suzan Maddox.

The Executive Board worked so diligently this year to perform their duties. All of them are to be thanked for such a successful year.

A vital part of Auxiliary is the staff at the Institute of Pharmacy. Many thanks to Erie Cocolas, Terri Little, Kathryn Jefferson, and Betsy and Al Mebane. I can never thank you enough for all that you have done.

All the support and help I received from the staff and Auxiliary members helped to make my year as WA president a wonderful experience for me. Thank you for believing in me and thank you for all of your encouragement. You are a wonderful group of which I am proud to be a part.

God bless you all. •



CORRESPONDENCE COURSE

SUNBURNED SKIN: TREATMENT WITH OTC PRODUCTS



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Objectives

At the conclusion of this lesson, participants should be able to:

1. identify specific portions of ultraviolet radiation associated with burning and tanning;
2. select specific pathologic changes and symptoms of sunburned skin;
3. choose important pharmacologic and toxicologic aspects, uses and misuses, and appropriate warnings associated with ingredients of OTC products used to treat symptoms of sunburn and;
4. choose from a list important points to convey to patients about safe use of OTC sunburn remedies.

Sun worshiping is a national pastime for many Americans, even though they are advised to avoid excessive contact with solar radiation. As a result of their overzealous exposure, millions suffer from sunburn each year. Most acute dermal damage is self-limiting and causes little more than minor discomfort. The majority of these conditions are self-treatable. But some injuries may be extremely painful, and require physician intervention and intense therapy. And there is convincing evidence that solar damage is cumulative over a lifetime, such that serious pathology can result later in life, as a result of dermal changes acquired years earlier.

The pharmacist is often the first person to be consulted on how to treat sun-damaged skin, or to answer questions that are posed in the popular press about long-term exposure to sun.

This month's lesson helps answer those questions and discusses OTC products used to treat sunburn-injured skin. Physiologic reactions to sunburn are also explained to facilitate understanding of these products and other therapies.

Burns

More than two million Americans sustain serious burn injury each year. Approximately 100,000 require hospitalization, with about 10,000 succumbing to their injury. While burns result from many causes (i.e., contact of the skin with heat, electricity, infrared and ultraviolet solar rays, ionizing radiation and chemical agents), most mild burns are triggered by overexposure to ultraviolet rays of the sun. Most severe burns are caused by heat from

flames, hot liquids, or direct contact with hot objects.

The direct outcome of burn injury is coagulation of dermal protein resulting in tissue necrosis. This destroys the skin's ability to fulfill its many functions.

Burns are categorized as first, second, or third degree with differentiation based mainly on the size of the area affected, and depth of the wound. Sunburn injury may be first or second degree.

First degree burns are treatable on an ambulatory basis. There is generally only superficial epithelial cell damage exhibited by localized areas of redness, which blanch to white on pressure, due to the body's normal inflammatory response to injury. Scarring does not occur with first degree burns and they generally heal within three to four days.

Second degree burns can be caused by excessive sun exposure, contact with hot objects for a short period of time, short blasts of intense heat, and boiling water. Second degree burns destroy the affected epidermis and may damage the upper level of dermis. They are characterized as weeping, blistering, beefy-red wounds. Pain receptors and nerve fibers are generally intact, and there is pain upon touching the wound. If skinned appendages (e.g., hair shafts, sweat and sebaceous glands) remain intact and infection is prevented, spontaneous healing and regeneration is possible. With proper care, the healing process usually takes about a month.

Third degree burns result from prolonged exposure to intense heat, flames, electricity or chemicals, or immersion in scalding liquids. The entire epidermis and dermis are destroyed, as are all skinned appendages, along with varying amounts of subcutaneous fat and muscle. Since the sensory nerves are destroyed, third degree burns are painless and unresponsive to touch. Because the skinned appendages have been destroyed, regeneration of epithelium and spontaneous wound healing are rare. Skin grafting is often necessary to completely heal the wound.

It is generally held that first degree burns are self-treatable. Second degree burns on less than 15% of the body, or third degree burns on less than 2% (depending on the area involved) can be treated on an ambulatory basis with medical supervision. Second degree burns greater than 15%, or third degree burns greater than 2% of the body's surface, require hospitalization and rigorous treatment.

The Sun as a Source of Skin Damage

Much of the sun's energy that reaches the earth's surface on a cloudless day is ultraviolet (UV) radiation of the UV-A spectrum. About 10 percent is UV-B. UV-A radiation is also designated "tanning," and UV-B, "burning," rays.

At any given point on the planet, the sun is most directly overhead between 10:00 a.m. and 2:00 p.m. Here, solar rays travel a shorter distance through the stratosphere, and are least absorbed by the earth's ozone layer. The amount of UV energy that reaches the surface decreases when solar rays are filtered through clouds. UV-B is about 1000 times more potent than UV-A in promoting burning. Therefore, most damage from burning is from UV-B rays.

Sunburn damage occurs to the greatest extent during the summer months. But sunburn is also possible during winter, especially at high altitudes. The intensity of UV light increases approximately four percent for each 1000 ft. elevation above sea level. At 6000 ft., for example, solar UV energy is increased 24 percent compared to sea level.

Direct exposure to UV rays is not required to sustain burning. Light, shiny surfaces reflect UV light: with sand up to 25 percent; white painted surfaces and snow, shiny metal surfaces, and city pavements up to 70 percent; water nearly 100 percent when the sun is directly overhead. Thus, even when protected from direct exposure to overhead rays by an umbrella or hat, reflected UV rays can still cause damage.

Melanin. The amount of UV radiation that penetrates the skin and the degree of sunburn injury are inversely proportional to the concentration of melanin in the dermis. Melanin pigments are formed by specialized cells, melanocytes, in the basal layer of skin in response to UV radiation. They migrate upward to impart a tanned appearance to the skin.

Table 1
Representative OTC Products For Treating Sunburn

Product (mfr.)	Dosage form	Anesthetic	Antimicrobial
Americaine Anesthetic (Fisons)	Ointment, Aerosol	X	
Bizocine (Creighton)	Cream	X	
Butesin Picrate (Abbott)	Ointment	X	
Dermoplast (Wyeth/Ayerst)	Lotion, Aerosol	X	
Foille (Blistex)	Ointment	X	X
Foille Plus (Blistex)	Aerosol	X	X
Foille Medicated First Aid (Blistex)	Ointment, Aerosol	X	X
Medicone Dressing (Medicone)	Cream	X	X
Medi-Quik (Mentholatum)	Aerosol, Pump spray	X	X
Nupercainal (Ciba)	Cream, Ointment	X	
Pontocaine (Winthrop-Breon)	Cream, Ointment	X	
Prax (Ferndale)	Cream, Lotion	X	
Rhulicaine (Rydelle)	Solution	X	
Solarcaine (Plough)	Cream, Lotion, Aerosol	X	X
Surfadil (Lilly)	Lotion	X	
Tronothane (Abbott)	Cream, Jelly	X	
Unguentine (Mentholatum)	Ointment, Aerosol	X	
Xylocaine (Astra)	Ointment	X	

Tanning helps protect the skin from further injury. Fair-skinned individuals burn more easily than persons with darker complexions, because they have fewer melanocytes and, therefore, less inborn protection.

Solar radiation enhances the cell division rate of epidermal cells. This promotes thickening of the stratum corneum in about 4 to 7 days, making the skin even more impervious to penetration by UV radiation. Therefore, persons who are exposed to non-burning concentrations of sunlight over long periods will be partially protected from burning.

Reaction to Sunburn. The body's natural reaction to sunburn includes early inflammation with edema due to infiltration by lymphocytes, endothelial swelling, and capillary leakage of erythrocytes. Histamine, liberated in skin, is responsible for the early phase of the sunburn reaction. Histamine concentration returns to normal within 24 hours; therefore, it is generally accepted that there are other mediators responsible for the latter phases of sunburn injury.

Prostaglandins (PGs) of the PGE and PGF series are commonly implicated chemical mediators of the delayed erythema (redness) reaction that follows within 14 to 20 hours after exposure, and persists 1 to 3 days. Evidence favoring this hypothesis includes: (1) PGs are synthesized in human skin; (2) their levels increase after UV irradiation; (3) sunburn blister fluid contains significantly elevated PGE2 concentration; (4) exogenously administered PG causes erythema at the site of injection; and (5) blocking PG synthesis with indomethacin and other inhibitors of their synthesis may significantly attenuate the sunburn reaction.

Symptoms

The first manifestation of sunburn is a pink or scarlet discoloration of the skin in Caucasians, along with mild edema. This may progress to bright erythema with intense edema and/or blistering, depending on the extent of injury. The skin will be tender, warm, and taut if the burn is mild. Itching is common, and is the major symptom for which consumers seek relief. The area may be extremely painful if injury is severe.

Within 12 to 24 hours, pain, tenderness and

Table 2
OTC Skin Protectants For Sunburn

Agent	Concentration (%)	Moisturizes	Lubricates
Allantoin	0.5-2.0	X	
Cocoa butter	50-100	X	X
Dimethicone	1-30	X	X
Glycerin	20-45	X	
Petrolatum	30-100	X	X
Shark liver oil	3	X	X
Zinc carbonate	0.2-2		X
Zinc oxide	1-25		X

erythema are usually maximized. The skin may blister or peel in one to several days with severe injury, and the victim may experience nausea, chills and fever, and tachycardia.

Acute, uncomplicated sunburn heals without scarring. If secondary infection develops, scarring may follow. Infection is difficult to treat because damaged skin provides an excellent medium for microbial growth. When the underlying vasculature has been damaged, tissue is also less capable of protecting itself. Early colonization is chiefly by Gram-positive bacteria (e.g., staphylococci, streptococci). By the third day post-irradiation, the flora changes to primarily Gram-negative organisms (e.g., pseudomonas, klebsiella, proteus) and fungi (candida). Left unchecked, these pathogens can invade underlying and adjacent healthy tissues, and possibly gain entry into the general circulation.

Chronic exposure to UV radiation, especially in light-complexioned persons, causes fine wrinkling of the skin, and basal cell and squamous cell cancer. It may also be a risk factor for malignant melanoma.

Treatment of Sunburn

Mild sunburn, or burn damage from other sources, responds to treatment with OTC products (Table 1). When extensive blistering, extreme erythema and/or pain are present, affected persons should be referred to a physician.

Counterirritants. Counterirritants (camphor, menthol, phenol) partially relieve dermal discomfort by stimulating cutaneous cold receptors. Their exact antipruritic mechanism is unknown, but overriding the lower level of itching (mild inflammation of pain receptors) is thought to be contributory. Counterirritants may irritate burned areas, and therefore, should not be used on these lesions.

Protectants. Minor burns often respond satisfactorily to a skin protectant (Table 2). These add moisture to the skin to help reduce dryness, and/or lubricate it to minimize further damage from friction by clothing and bed sheets.

Local Anesthetics. Most OTC sunburn remedies contain a local anesthetic. They interfere with the generation and transmission of nerve impulses by affecting the transport of sodium and potassium across cell membranes.

Local anesthetics are poorly absorbed across unbroken, intact skin. When applied to small, localized areas, the amount absorbed is not sufficiently significant to cause systemic reactions. Applied to large areas of damaged skin, however, they may be absorbed sufficiently to initiate toxicity.

Initial symptoms of toxicity are characterized by central nervous system stimulation followed by depression. Cardiovascular functions may also be depressed, resulting in reduced cardiac output, and hypotension with shock. Pramoxine and dyclonine do not cause systemic toxic sequelae characteristic of "caine"-type local anesthetics. They may depress cardiac function, but they do not significantly stimulate the CNS.

Local anesthetic action persists approximately 30 to 45 minutes following topical ap-

plication. They should not be applied more frequently than four times daily. Use is ideally reserved for periods when pain and/or itching are particularly bothersome, such as in the morning, at bedtime, and other quiet times of the day.

Local anesthetics should not be recommended for severe burns, as they may prolong the time before a burn victim will contact a physician. Table 3 lists local anesthetics that are safe and effective for OTC self-treatment of sunburn pain.

Antihistamines. Antihistamines block attachment of histamine to its physiologic receptors and, therefore, help control itching. Their mechanism of action is uncertain. They possess weak local anesthetic action when applied topically and benefit is probably due to this action upon dermal sensory receptors.

Hydrocortisone. This drug has been available without prescription in some parts of the world since its introduction in the early 1950s. It was one of the first drugs to be shifted to the OTC market due to the extensive review initiated by FDA in the 1970s. Since the release of 0.5 percent nonprescription hydrocortisone products in 1980, hundreds of millions of people have applied it topically to self-treat itching and other inflammatory skin conditions. There is no indication that OTC products containing hydrocortisone are dangerous when instructions are followed. In fact, at the time of preparation of this article, efforts were underway to bring 1 percent hydrocortisone to the OTC market.

While hydrocortisone does not play an active role in healing sunburn, it may alleviate associated itching. Numerous studies have demonstrated hydrocortisone's effectiveness as an antipruritic, although the antipruritic action may not be felt for a day or two. A local anesthetic can be applied during this period.

Topical hydrocortisone has two fundamental actions. It constricts cutaneous blood vessels which prevents mobilization of white blood cells (polymorphonuclear leukocytes and monocytes) into the area. It also antagonizes the inflammatory response of mast cells and others that release mediators of inflammation. Therefore, itching is relieved.

Table 3
Safe and Effective
Local Anesthetics for OTC Use

Agent	Concentration (%)
Benzocaine	5-20
Benzyl alcohol	10-33
Butamben picrate	1
Dibucaine	0.25-1
Dimethisoquin HCl	0.3-0.5
Dyclonine HCl	0.5-1
Lidocaine	0.5-4
Lidocaine HCl	0.5-4
Pramoxine HCl	0.5-1
Tetracaine	1-2
Tetracaine HCl	1-2

Antimicrobials. Skin that is not broken has a minimal chance for becoming infected. Antimicrobials are therefore not necessary for mild burn injuries. For severe damage where the skin is broken, the chance for secondary infection is greater. Here, first aid antibiotic ointments may help guard against infection. If the affected area is extensive, physician supervision is necessary.

OTC Internal Analgesics. Aspirin and ibuprofen inhibit cyclooxygenase and reduce prostaglandin (PG) synthesis. Some experts contend that 600 to 650 mg aspirin, taken soon after sun exposure and repeated every 2 hours for 6 doses, may prevent the delayed erythemic sunburn response. Other nonsteroidal anti-inflammatory drugs including ibuprofen theoretically have the same advantage. Acetaminophen does not exert the same action, but its analgesic action may also relieve sunburn discomfort.

Cold Water. Treating sunburns with cold (but not ice-cold) water is a popular treatment. The temperature deep within the skin structure increases following burning, causing continued extension of the local damage. Reducing the temperature with cold water lessens thermal damage due to coagulation of protein in surrounding areas. Cold water is also anesthetic. Because it is vasoconstrictive, it also suppresses local edema and potential reactive hyperemia (excessive edema).

Cold compresses may ease pain and minor symptoms from sunburn when applied as late as 45 minutes after injury. It may help reduce edema even when applied 4 hours after burn injury.

OTC Product Dosage Forms

Cream and ointment products should be applied in a thin layer and gently rubbed in. Creams are easier to apply than ointments, but are less protective against dryness. Ointments are superior for relieving dryness. Emulsion lotions are also effective in treating dryness.

Aerosol products have a distinct advantage in that they apply medication without the need to rub it in and increase discomfort. They also impart a welcome coolness to the skin when the propellants evaporate after application. Aerosol products should not be sprayed onto the face or near the eyes. If a consumer chooses to use a spray product on the face, medication can be applied to a hand, or on cloth or cotton, and rubbed onto the face. Aerosol containers should also be kept out of direct sunlight, away from heat, and out of the reach of children.

Counseling Consumers on Sunburn and its Treatment

OTC sunburn remedies can be recommended with confidence. Most sunburns are minor and superficial. OTC products will not curtail the underlying burn process, or prevent blister formation, but they do offer relief of symptoms while the area heals.

When cold water therapy is recommended, the affected area should be immersed in cold water, or alternatively, water-soaked compresses may be applied. Burow's solution or other emollient or skin protectant products can be used if itching is intense. Fluid should be changed, or compresses resoaked, as often as needed to keep the area cool. Application should be maintained until the area is free from pain. The skin should then be gently patted, not rubbed, with a clean towel.

Minor sunburn must be distinguished from severe damage. Whenever there is doubt about the extent of damage, the individual should be referred to a physician for assessment. It is recommended that the victim be referred when severe or extensive sunburn involves more than 10% of the body surface area of a child, or more than 20% of an adult.

Applying first aid or palliative treatment to a severe burn at home may delay the time that the patient seeks a physician. Effective therapy for a severe sunburn can therefore be hindered and scarring worsened.

A person's history of sun exposure may not always correlate with the intensity of symptoms. Some people develop an exaggerated response after minimum exposure to the sun. The person may be taking a drug or using a cosmetic or other product on the skin that increases sensitivity to sunlight. Common photosensitizers in the U.S. included sulfonamide derivatives, (including thiazide diuretics and oral hypoglycemics), tetracycline and phenothiazine derivatives, cosmetics and beauty aids. Other causes of accentuated reactions include contact dermatitis and viral exanthems (eruptions), which may be worsened by sun exposure.

Needless to say, the best treatment for sunburn is to prevent it from happening. The use of sunscreens accomplishes this goal. •

A professional development program made possible by an educational grant from

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CORRESPONDENCE COURSE QUIZ

Sunburned Skin

1. Which of the following burns causes the most damage to the skin?
 a. First degree
 b. Second degree
 c. Third degree

2. Which of the following is proven safe and effective for self-medication of pain of sunburn?
 a. Camphor
 b. Diphenhydramine
 c. Menthol
 d. Pramoxine

3. Which of the following is most responsible for tanning of skin?
 a. UV-A
 b. UV-B
 c. UV-C

4. All of the following statements about prostaglandins (PGs) are true EXCEPT:
 a. PG levels in the skin decrease after ultra violet irradiation.
 b. sunburn blister fluids contain significantly elevated PG concentrations.
 c. blocking PG synthesis attenuates the sunburn reaction.
 d. injecting PG into the skin causes erythema.

5. All of the following are safe and effective local anesthetics for OTC use EXCEPT:
 a. dibucaine.
 b. lidocaine.
 c. procaine.
 d. tetracaine.

6. When recommending OTC sunburn remedies, all of the following points should be conveyed to consumers EXCEPT:
 a. most sunburns are minor and superficial.
 b. OTC products curtail the burn process and prevent blistering.
 c. adults with extensive sunburn over 20% of their body should contact a physician.
 d. OTC products relieve sunburn symptoms while the affected area heals.

7. All of the following local anesthetics are available OTC in an aerosol dosage form ECXCEPT:
 a. Americaine.
 b. Dermoplast.
 c. Solarcaine
 d. Xylocaine

8. The delayed erythema response to sunburn is most likely due to:
 a. histamine.
 b. prostaglandins.
 c. serotonin.
 d. acetylcholine.

9. The pigment formed in specialized cells in the basal layer of skin responsive to ultraviolet radiation is:
 a. collagen.
 b. erythmin.
 c. coagulin.
 d. melanin.

10. Which of the following OTC skin protectants provides both moisturizing and lubricating effects?
 a. Allantoin
 b. Dimethicone
 c. Glycerin
 d. Zinc Oxide

PHARMACY CALENDAR
1991

Sept. 9	"Talk About Prescriptions Month" Kits Mailed to All NC Pharmacies
Sept. 14-15	6th Annual Pharmacy Practice Seminar, Wilmington
Sept. 16	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Sept. 16	Tripartite Committee Meeting, Institute of Pharmacy
Sept. 17	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 2-3	NCSHP Fall Seminar, Holiday Inn Four Seasons, Greensboro
Oct. 15	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct.1-31	**"Talk About Prescriptions Month — NC Pharmacy Brown Bag Days in October"**
Oct. 20-26	**NC Pharmacy Week/National Pharmacy Week**
Oct. 23	Pharmacy Museum Committee Meeting, Raleigh
Oct. 24	Woman's Auxiliary Fall Convocation, Institute of Pharmacy
Oct. 27-31	NARD Annual Meeting, Baltimore, MD
Nov. 18	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Nov. 19	NC Board of Pharmacy Meeting, Institute of Pharmacy
Dec. 8-12	ASHP Midyear Clinical Meeting, New Orleans, LA

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- Attach a mailing label from *The Carolina Journal of Pharmacy* or print your name and address and mail to: CE Test, NCPhA, P.O. Box 151, Chapel Hill NC 27514.
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- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
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- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

Please circle correct answer

1. a b c	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c	6. a b c d	9. a b c d
		10. a b c d

Evaluation of material: Excellent Good Fair Poor

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This column features news briefs about people and events related to pharmacy around the state. The NCPhA staff and The Journal's Editorial Advisory Board welcome your contributions to this column. Photos (black and white) are also welcome. Send us your news!

This month's Around The State column was prepared by Tonya Loye Worley, a sixth year student at Campbell University School of Pharmacy, during her one-week rotation at the NCPhA.

In the News

Larry Arnold of the Corner Drugstore in Franklinton sponsors an annual $200 scholarship for a Franklinton High School senior football player with the highest cumulative grade point average. The scholarship is called the W.L. Johnson Scholarship in memory of a former mayor of Franklinton and supporter of Franklinton High School's athletic programs. The 1991 scholarship recipient was Jonny Garvin.

Suttle's Drug Store in Shelby recently dispensed its one millionth new prescription. The store's owner and pharmacist is **Charles Rhoden Jr.**

Bill and Hazel Post of Reidsville have established Rockingham Center Pharmacy. Hazel is a 1961 UNC-CH School of Pharmacy graduate; Bill is a 1967 graduate of the Mercer University School of Pharmacy. Both were pharmacists at Eckerd's and Revco before opening their own pharmacy. Hazel is also a consultant pharmacist for the Rockingham County Health Department.

Theresa M. Lowry of Statesville presented "The Role Prescription Drugs Play in Improving Breathing" to the Better Breathing Club, a community support group for people experiencing breathing problems and their families. She works at Lowry Drug Co. with her husband, **Fred W. Lowry Jr.**

Helen Purser of Bayboro addressed the Pamlico County Chapter of the American Diabetes Association on "Drug Interactions." Purser is a pharmacist at Bayboro Pharmacy.

Revco Drug Stores has instituted a new patient counseling program. When a new prescription is entered into Revco's computerized prescription file, the computer automatically prints a personalized leaflet with detailed information about the medicine. The information in the leaflets informs the patient about the medicine and personal dosage, tells the patient what to do before using it, and advises on its proper use, precautions, and possible side effects.

Charles Barnett, owner of Henderson Drugs, celebrated the grand opening of his newly relocated store. In addition to prescription drugs and OTC medications, the new store features cosmetics, gifts, and greeting cards, has free delivery and charge accounts, and a drive-in prescription window.

Durr-Fillauer Medical Services, a Birmingham, Alabama-based pharmaceutical and sundries company, opened a new warehouse in Charlotte. The 36,000 square-foot facility will sell prescription drugs, OTC products and other drugstore products to hospital and retail pharmacies.

Honors, Awards, and Citations

Joe Anne Griffith of Wendell was recognized as a recipient of Durham Technical Community College's "Faculty Recognition Award for Excellence in Teaching" at the 1990-91 commencement exercises. Griffith is a UNC-CH School of Pharmacy graduate.

Alex Powell of Drexel was chosen as Catawba Memorial Hospital's (CMH's) CARE Employee of the Month for March. A 1986 graduate of UNC-Chapel Hill, Ms. Powell has been a pharmacist at CMH for the past 17 months. When presenting the award, hospi-



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tal president, David O. Rice, commended Powell on her exemplary work performance and her consistently upbeat approach to dealing with both staff and visitors.

Tommy Dagenhart of Charlotte received the Merck, Sharp and Dohme Award for his sustained professional leadership. Dagenhart is a pharmacist at the Nalle Clinic in Charlotte.

Appointments

Jack G. Watts of Burlington has been selected chairman of the Burlington Board of Education. He has served on the Board for 23 years. Watts is the Associate Director of Pharmacy Education at the Greensboro Area Health Education Center, an Adjunct Professor of Pharmacy Studies at CU School of Pharmacy, and a Clinical Associate Professor at the UNC-CH School of Pharmacy.

Gov. Jim Martin has reappointed **Paul Bissette** of Wilson as a member of the State Commission for Health Services. He will serve until April 30, 1995. Bissette, who replaces **Harold Vann Day**, is president of Bissette's Drug Store's Inc.

Norwood Pitt Blanchard has been elected to First Citizens Bank's local board of directors in Burgaw. He will assist bank management with business development and policy matters and will serve as a liason between First Citizens Bank and the community. Mr. Blanchard is the owner of the Discount Drug Center.

William R. McDonald III, mayor of Hickory, has been elected director and vice president of state operations for the newly formed Medipak Management Co., Inc. Medipack serves the pharmacy needs of nursing homes in the Carolinas, Virginia, Georgia, and Florida.

Weddings

Andrea Joy Gallagher and Todd Patrick Angel, both of Greensboro, were united in matrimony April 20, 1991, at the Westover Presbyterian Church in Greensboro. The new Mrs. Angel is a 1989 graduate of the UNC School of Pharmacy and a clinical staff pharmacist at the Moses H. Cone Memorial Hospital in Greensboro.

Carla Dawn Miller and Joseph Hunter Norman V were married on April 13, 1991 at First Baptist Church of Statesville. The bride is a 1990 graduate of the UNC School of Pharmacy and is employed with Revco Drug in Denver.

Laurie Ann O'Daniel of New Bern and Lyndon Kirkman Jordan III of Smithfield were married on April 27, 1991 at Centenary United Methodist Church in New Bern. The new Mrs. Jordan is a graduate of the UNC Schools of Pharmacy and Medicine. She is currently a resident in anesthesiology at Duke University Medical Center.

Amy Ester Rich and Henry Johnny Bowden, both of Fayetteville, were married April 13 at Salem United Methodist Church. She is a graduate of the UNC School of Pharmacy. They reside in Eastover.

Donna Kay Saufley and Stanley E. Ferrell were united in marriage April 20, 1991 at University United Methodist Church in Chapel Hill. The bride is a graduate of the UNC School of Pharmacy and a consultant pharmacist with Apothecare Pharmacy of Tallahassee, Fla.

Births

Tami and **Christopher D'Amico** of Bangor, Maine, are pleased to announce the birth of James Field on June 28, 1991. James weighed 7 lbs 15 oz and Jennie, now 3 years old, is a very proud "big sister." Christopher is a 1988 UNC School of Pharmacy graduate and currently employed at Wellby Super Drug in Brewer, Maine.

Deaths

Dr. Garrett Earl Andes, 94, died March 12, 1991 at Covenant Village Retirement Community in Gastonia. Surviving is his wife, Elva. Andes was a NCPhA Life Member.

L.E. McKnight Jr. of Buies Creek died March 9, 1991 at the age of 69. He graduated from the UNC School of Pharmacy in 1942. During his career, he first operated Wiggins Drug Store in Buies Creek and later owned pharmacies in Coats and Angier, where he served the Harnett County Community for more than 35 years. •



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FOR SALE: Drug store in Piedmont NC. For price of inventory only. Respond to Ad: SAP, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514. A.S.A.P.

Community Pharmacist Positions

PHARMACISTS WANTED: Kerr Drug Stores has positions available for pharmacists in some of our locations in North Carolina. Kerr Drug offers opportunity for growth into store management. Excellent benefits. Send resume to: Jimmy Jackson, Director of Pharmacy Services, P.O. Box 61000, Raleigh, NC 27661 or call 919-872-5710.

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PHARMACIST WANTED: Join a leader in long-term care pharmacy. Applications now being accepted for staff position. Excellent hours, above average compensation pack-

age, hospital background helpful. Send resume to: Pharm-Save Inc., P.O. Box 1377, Kinston, NC 28501, Attention Skip Sykes.

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Miscellaneous

DOCTOR OF PHARMACY (PHARM.D.): Would you like to obtain a Pharm.D. degree? If you are a recent B.S. Pharmacy graduate, contact the Director of Admissions, Campbell University School of Pharmacy, Buies Creek, NC 27506 or Call 800-334-4111, Ext. 3101.

NC PHARMACIST seeks retail position in the Fayetteville area. Would like to be part of a challenging professional environment with growth potential. Reply to ad GAC, c/o NCPhA, P.O. Box 151, Chapel Hill, NC 27514.

PHARMACY CHRISTMAS! Walt Disney "Goofy The Doctor," 4-1/2" figurine, $22.95; U.S. Pharmacy Stamp Commemorative Knife, 3-3/4" blade, $16.95; "The Elf Pharmacist" by Tom Clark $49.95. Satisfaction or money back! 3R's: 800-244-5439.

FOR SALE: Hope Liberty 1-hour color photo lab, 3 years old. Will develop and print 110, 126, Disc, 135 and 120/220 color film. Brand new rotex silver recovery system. All equipment and supplies needed. Requires space of about 10' x12'. Original cost $49,000+, asking $20,000. Call Harry Stone 704-636-0680.

PHARMACIST WANTED: Blue Cross and Blue Shield of North Carolina (Durham Service Center) is seeking pharmacists to work on a part-time as needed basis to screen and code drug claims for processing. Excellent opportunity to learn. Good salary. Apply to: Jane McMullen, Personnel, Blue Cross and Blue Shield of North Carolina, Post Office Box 2291, Durham, NC 27702.

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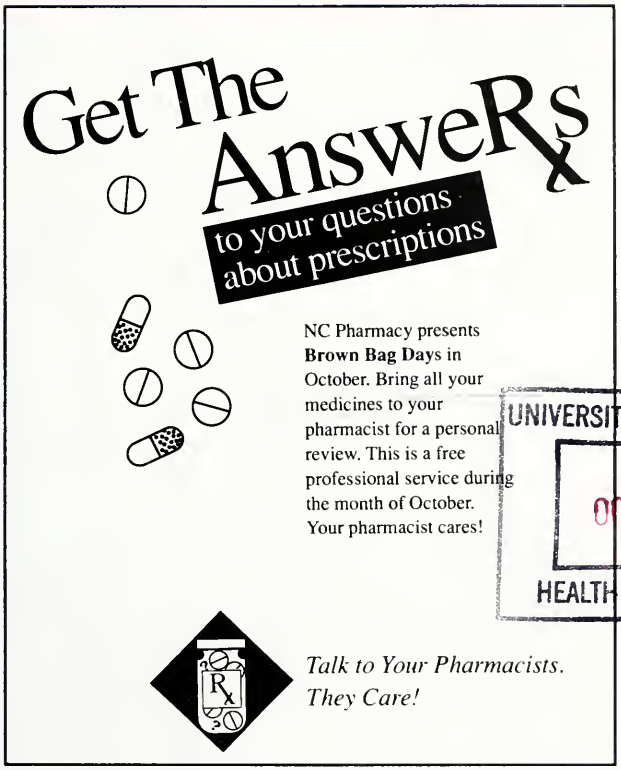
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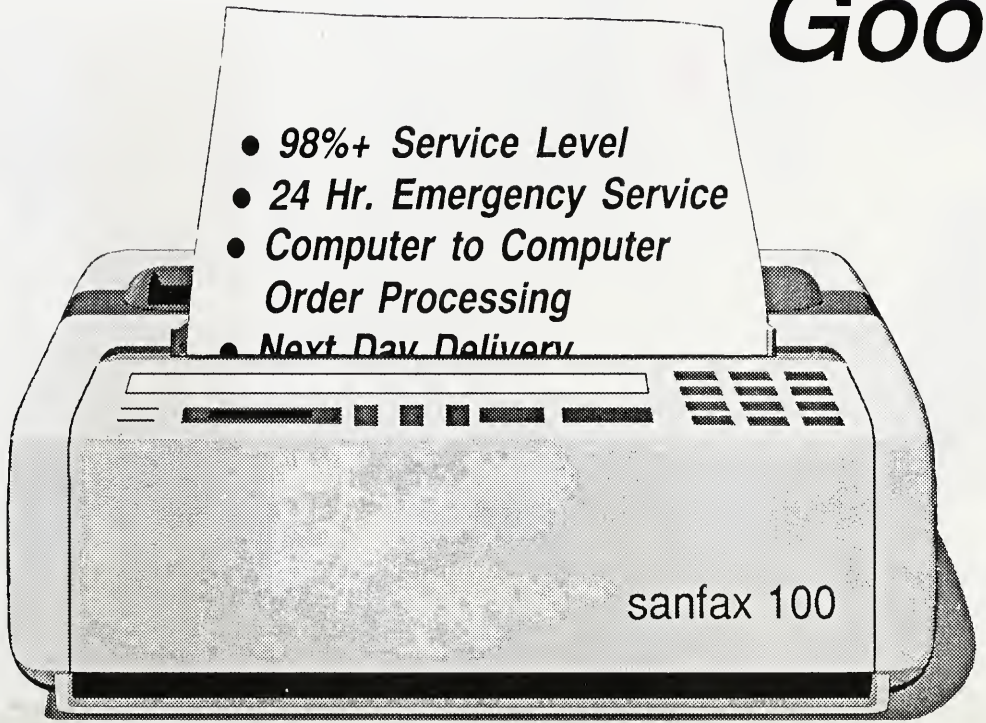


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North Carolina Pharmaceutical Association

Officers

President
Betty H. Dennis
104 Calumet Court
Carrboro, NC 27510
919•962•0030

President Elect
Henry L. Smith
P.O. Box 147
Farmville, NC 27828
919•753•7111

Past President
J. Frank Burton
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Journal Staff

Editor
Kathryn F. Kuhn

Editorial Assistants
Anthony G. Cocolas
Erie C. Cocolas
Terri M. Little

Publisher
Alfred H. Mebane III

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343

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PRESIDENT'S PAGE

OCTOBER IS "TALK ABOUT PRESCRIPTIONS MONTH"

For the 1991 "Talk About Prescriptions" campaign, NCPhA will be sponsoring a variety of activities to increase communication between patients and pharmacists and to raise awareness of the health services pharmacists can provide to the local community.

NCSHP will be a cosponsor of our campaign, and Burroughs Wellcome Company and Glaxo, Inc. have made generous financial contributions to support our activities. Ask The Pharmacist, Inc. is supporting our annual Pharmacy Fact Day event on October 5, 1991, by providing the use of its facilities and a statewide tollfree phone line for patients to call and get the answers to their questions about their medications.

The focus of our annual "Talk About Prescriptions Month" campaign, October 1 – 31, 1991, will be a "Brown Bag Days" theme. Patients will be encouraged to "bag up" their medications and bring them to their local pharmacist for review. Pharmacists will educate patients about prescribed therapy and OTC medications, determine any duplication of prescriptions and evaluate compliance.

The North Carolina Medical Society has been contacted to make members aware of our activities and to let them know that pharmacists may be calling on local physicians to assist in resolving any medication problems that are noted during these reviews.

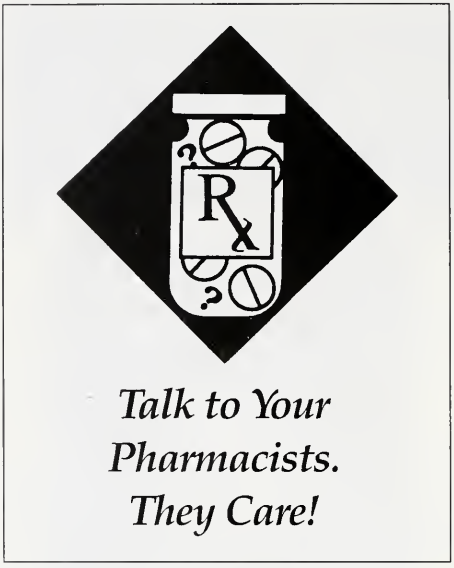
We are encouraging the public to get to know their "Family Pharmacist." As pharmacists, we have the responsibility to provide health care services as well as providing medications. A special thanks to Rebecca Wheeler of Charlotte, her Committee and the NCPhA staff who have spent many hours planning and developing our activities. Also, thanks to all of you, our members, who enthusiastically support the programs of our Association and make ideas become visible health care contributions to our patients and communities. ■



Betty H. Dennis, NCPhA president

NOTE

The Continuing Pharmaceutical Education (CPE) Review Panel announced that effective September 1, 1991, no CPE programs dealing with "Personal Financial Management" would be approved for North Carolina CPE credit. Programs relating to pharmacy management will continue to be approved through the same procedure as in the past. For more information, contact the NCPhA Central Office at 800-852-7343.



1991 "TALK ABOUT PRESCRIPTIONS MONTH" FEATURING NC PHARMACY BROWN BAG DAYS IN OCTOBER

A bigger and better "Talk About Prescriptions Month" campaign has been planned this year. North Carolina pharmacy's chosen theme is "NC Pharmacy Brown Bag Days in October" which will be promoted to the public through a statewide, multi-media campaign. The goals of the 1991 "Talk About Prescriptions Month" promotion are to educate and inform the public about the importance of proper communication with their pharmacist, to increase the public's expectation of pharmacy services and the value of pharmaceutical care, and to enhance pharmacist-patient relations. The NCPhA in conjunction with the NCSHP has planned the following activities to promote "NC Pharmacy Brown Bag Days in October." Get involved by implementing a Brown Bag Program in your pharmacy, as your patients are bound to be asking about it! All you need to set up a Brown Bag Program can be found in the Brown Bag Kit you have received in the mail.

1991 TALK ABOUT PRESCRIPTIONS MONTH CAMPAIGN ACTIVITIES

- Brown Bag Kits mailed to all pharmacies in North Carolina;
- Governor's proclamation for NC Pharmacy Week, October 20–26, 1991;
- Pharmacy Fact radio messages aired across the state;
- "Talk To Your Pharmacist" billboards in Wilmington, Durham, Winston-Salem, Greensboro, and Charlotte;
- Guest appearance on *The Peoples' Pharmacy* radio program hosted by Joe Graedon on October 5, 1991;
- Pharmacy Fact Day, a statewide, tollfree medication hotline for the public, October 5, 1991, 10:00 a.m. – 4:00 p.m., sponsored by Ask The Pharmacist, Inc.;
- News releases sent to selected newspapers and TV stations across the state;
- Guest appearances on WCHL Morning Radio Programs:

September 25	Kick off promotion—NC Pharmacy Brown Bag Days during the "1991 Talk About Prescriptions Month" in October;
October 4	Pharmacy Fact Day, October 5, 1991 promotion; and
October 18	A review of the 1991 "Talk About Prescriptions Month" campaign and promotion of the valuable services NC pharmacists have provided throughout the month of October and every month of the year.

The NCPhA 1991 "Talk About Prescriptions Month" activities have been made possible through educational grants from Burroughs Wellcome Co. and Glaxo Inc. and through the many hours of hard work and the commitment of its volunteer members. ■

BROWN BAG PROGRAMS: A "HANDS-ON" APPROACH TO MEDICINE MANAGEMENT

A 70 year-old woman with a new prescription medicine reports feeling depressed and disoriented — side effects not usually associated with the medication. Examination shows that a construction worker's previously well-controlled arrhythmia is no longer responding to treatment. A low dose of a barbiturate unexpectedly causes a young mother to lose consciousness.

Although these medical problems are very different, one diagnostic tool can explain, and could have prevented, each of them — the medicine review. One proven method of conducting a medicine review is a Brown Bag Program. In this approach to promoting safe and effective medicine use — long used by many pharmacy organizations — patients "bag up" all prescription and nonprescription medicines and take them to a pharmacist, physician, or nurse. The professional examines the medicines and talks with the patients to assess the potential for adverse interactions or reactions, the patients' understanding of and compliance with instructions for use, and the possibility of out-of-date medications.

The Year 2000 Health Objectives for the Nation, developed by the U.S. Office of Disease Prevention and Health Promotion, affirms the value of medicine reviews. They recommend that primary health care providers perform medicine reviews routinely for all their elderly patients, who are likely to be taking more than one medication. While older Americans are an important target group for medicine reviews, multiple medicine users of any age can benefit from a medicine review. For example, many working age adults, especially those over age 54, take several prescription medicines in combination.

Who can sponsor Brown Bag Programs? They can occur in a variety of settings, and be organized by a variety of groups, including:

- ❖ community pharmacists who may offer Brown Bag Days in pharmacies;
- ❖ local pharmacists who may run periodic, community-wide Brown Bag Clinics;
- ❖ Schools of pharmacy which may offer Brown Bag Clinics to campus groups and help community pharmacists run a Brown Bag Program in community pharmacies, hospital outpatient pharmacies, public health departments, etc.; and
- ❖ Hospitals, clinics and HMOs which may offer Brown Bag Programs to their patients or open the program to the community or to their employees.

To help pharmacists implement their own Brown Bag Program, the North Carolina Pharmaceutical Association (NCPhA), in conjunction with the North Carolina Society of Hospital Pharmacists (NCSHP), Burroughs Wellcome Co., and Glaxo Inc., have developed a **Brown Bag Kit** which includes:

- ❖ **Pharmacists' Instructions**. These are guidelines for organizing a Brown Bag Program, based on the successful experience of groups such as the University of Rhode Island School of Pharmacy and the National Council on Patient Information and Education (NCPIE).
- ❖ **Publicity Tools.** These include a publicity poster, promotional buttons, reproducible promotional materials (see artwork on the cover of this journal issue), sample news releases and radio messages that pharmacists can personalize with their own information.
- ❖ **Patient Medication History Form.** The form guides the interviewer through the medication assessment. It has space to record basic information about each medication discussed. The form can also serve as a permanent record of the encounter and can be shared with the patient's other health professionals.

A Brown Bag Kit was mailed to all pharmacies in North Carolina at the beginning of September. Both organizations will be promoting Brown Bag Programs to the public

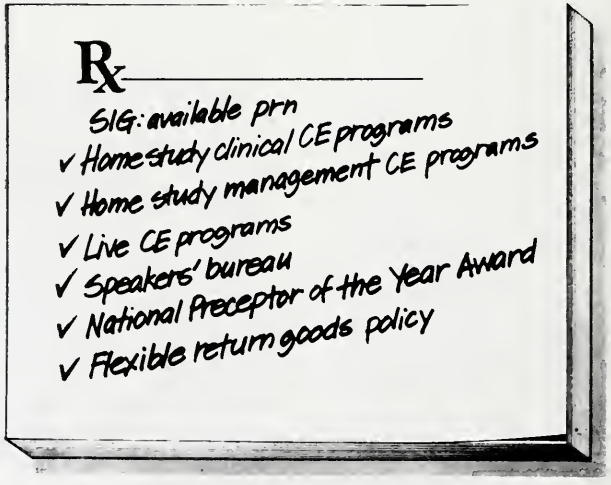
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SOME EXAMPLES OF QUESTIONS TO ASK THE PATIENT

1. Do you have any medicine allergies?
2. What do you take the medicine for?
3. Are you currently taking this medicine?
4. When did you last visit your doctor in regard to this medicine?
5. How do you take the medicine?
6. Do you routinely take the medicine in the manner you just described?
7. How long have you been taking the medicine?
8. Is the medicine in its original container?
9. Do you have any side effects from this medicine?
10. What nonprescription medicines do you take? Why do you take them? When? How do you take them? Do they work?

during "NC Pharmacy Brown Bag Days in October," the theme adopted this year by the two groups for the "1991 Talk About Prescriptions Month" campaign, October 1 – 31, 1991.

Conducting a Medicine Review: The Basics

Before talking to the patient, it is important to collect basic information on each medicine the patient has brought to you:

- Medicine name;
- Strength;
- Directions on label;
- The prescriber's name;
- Is the patient currently taking the medication?
- When did the patient last see the prescriber regarding the medication?
- Does the patient understand how to take the medication?
- Does the patient comply with the medication instructions and take the medication as instructed?
- How long has the patient been taking the medication?
- Is the medicine in the appropriate container?

As a time saver, some programs have a nonprofessional volunteer or member of the office staff obtain this information prior to the interview.

Review the information collected from the patient for the following problems, which the University of Rhode Island program and others have found to be the most common concerns identified.

Duplication of Medicines. Many patients will be taking the same product under more than one name. This may be a result of multiple prescribers or of the drug product selection.

Example: *A 21 year-old man, who complains of an ulcer and a high pulse rate, gives the interviewer four prescriptions. Three of the four are for theophylline under three different brand names.*

Contraindications and Drug Interactions. These problems are frequently the most serious that the interviewer will encounter, and it is important to assess the possibility for adverse results by reviewing the patient's medicine allergies, reported side effects, and the potential for interaction among all the Rx and OTC medicines reported taken. Problems found will range from unimportant to clinically significant. The University of Rhode Island found that about 6% of problems were serious enough to require follow-up with the prescriber and/or dispensing pharmacist.

Example: *A patient taking warfarin had been told by her physician not to use any medicine containing aspirin. However, at a later date the physician prescribed another medication that contained aspirin.*

Drugs That Sound Alike. When patients are taking multiple medicines, it can be easy for them to mix up the technical names of products that start with the same letter or have a similar ending. This can cause a variety of problems, from following the wrong set of instructions for use to not taking some of the medicines at all.

Example: *A patient taking 13 prescription medicines has two products beginning with the letter "A." Although the names of the medicines are on the prescription label, the patient believes they are the same product—and combines the the tablets in one container. When it comes time for a refill, she obtains only the medicine named on that label.*

SIG Change. Some discrepancies between a patient's account of instructions and those that appear on the Rx container may be a result of the prescriber's having verbally changed a regimen between refills or without instructing the pharmacy to change the refill's label.

Improper Administration; Over-Under-Utilization. These problems are often due to inadequate patient understanding of instructions for use, which the health professional can correct. However, he or she should also probe for "intentional noncompliance" in which the patient decides consciously not to follow directions as given, help the patient overcome barriers to proper use, and reinforce the importance of adhering to instructions precisely. If the patient believes that he or she has achieved better results by altering the dosage or regimen, talk to the prescriber about changing prescription directions.

Expired Medicines. Patients who don't complete a course of therapy frequently hold onto the remainder for "the next time;" others who have a prescription for occasional use may not empty a container even after several years of periodic administration. A patient may also keep a prescription that has not expired but that the prescriber has discontinued. It is also important to verify that the patient is still under a doctor's advice to continue taking each medicine listed.

The interviewer may need to work with other professionals to ensure that serious problems are corrected. These include:

- a potential for (or evidence of) clinically significant reactions or interactions;
- overdoses or incorrect doses;
- incorrect medications prescribed for a problem.

As health care providers, pharmacists have a responsibility to provide health services, as well as provide medications. The NCPhA and NCSHP hope that you will decide to participate in "NC Pharmacy Brown Bag Days in October" to enhance your professional satisfaction and to help make ideas become visible health care contributions to our patients and communities by supporting your professional association's programs, as NCPhA President Dennis implores in her commentary this month.

This article was adapted from the 1991 Talk About Prescription Month Planning Guide published by the NCPIE. ■



DICKINSON'S PHARMACY

"For credible bids against mail-order plans, he [Gary Levine, vice president, Medicine Shoppe, Managed Care Department] has developed a formulary of maintenance drugs for contracts requiring a 90-day supply."

Goodbye, 30 day fills. Most readers of this column doubtless regard Medicine Shoppes as competition, if not even "unfair" competition.

But put past ideas aside for a few moments to consider an innovation this franchiser is experimenting with, and what it could mean to pharmacy overall — independents banding together for the purpose of actively soliciting third-party business on the basis of 90-day fills.

This is a good step beyond reluctantly accepting such a contract when it's jammed down your throat!

And, at first blush, there's the natural reaction that such marketing only hastens the profession's own doom by playing the mail-order companies' own game on their own turf without their drug cost advantages (discriminatory pricing purchases).

But listen to Gary Levine, vice president of Medicine Shoppe International's managed care department. "The last thing we need is more low-margin business," he told us recently, explaining his 90-day fill experiment.

Levine is designing AWP-based prescription management programs for self-insured plans, using sophisticated data reporting features to help control waste and improve care — in short, promoting pharmacy service over a price alone.

To build networks for specific contract negotiations, Levine says Medicine Shoppe often invites non-franchise pharmacies to participate along with franchised Medicine Shoppes.

For credible bids against mail-order plans, he has even developed a formulary of maintenance drugs for contracts requiring a 90-day supply.

"We have accessed a substantial amount of business this way," Levine told us. Until now, that business has been with HMOs and third-party administrators (TPAs), but several currently pending bids are with self-funded employers — which Levine says are more receptive to the concept of design savings than are HMOs and TPAs.

One of these, the Altoona (PA) school district, is considering four other bids — one from a local wholesaler-funded PSAO (ValuScript), one from the current contractor (Blue Cross/Blue Shield), and one from a mail-order program (FlexRx); the fourth was not known when this column was written. The school district expects to announced its choice 7/1 or 9/1.

Levine told us that regardless of the outcome of its pending bid in Altoona, his company will use that proposal as a model for Medicine Shoppe networks with other employer groups across the country. "We go in as a consultant to the plan, and not as a pharmacy *per se* or a TPA," Levine said.

"We design something they want, rather

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy—The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown, WV 26507-0848 at an annual subscription fee of $45. NCPhA accepts no responsibility for the views expressed in "Dickinson's Pharmacy" as they are those of the author and not necessarily those of NCPhA.

than a plan with incentives to steer beneficiaries into something they don't want."

"Our aim is to preserve business for our franchises, so it doesn't go to mail-order to some closed panel like a chain or PPO network. Our objective is to create an environment where you can put a well-conceived, well-designed, well-administered, well-managed program together and show the client that there's more to managing the drug benefit than the contract rate. I've sat on the other side where I was the TPA to the managed health care program, and seen the duplication of therapy, the inappropriate therapy — and I couldn't see what was done about it."

What Medicine Shoppe does about it, Levine says, is "much more intensive a selling process than simply saying,'We have a network and a discount rate.'"

Unlike the mail-order operator who simply provides a list of "we can do" features, Medicine Shoppe explains the cause-and-effect relationships involved (patient, prescriber, pharmacist, program) so that plan payors *understand* where the efficiencies are found.

"I feel it's essential for independent pharmacy — not just our stores — to have access to such a program, otherwise we're going to be at the mercy of everybody who comes up with a new approach to cutting pharmacy reimbursements and even bypassing pharmacy altogether as a valuable member of the team."

For this reason, Medicine Shoppe will often treat non-franchise members of its networks as equals, even to the extent — as in Altoona — of not charging participation fees. Further, administrative costs are charged to plans, not stores.

It may be too much like playing the mail-order game for some pharmacists.

But in the realities of the modern managed-care world that has been shaped — whether we like it or not — by the predatory practices of mail-order companies, it responds aggressively to 90-day fill policies.

In maintenance therapy, the 30-day fill is going the way of the dinosaur. ■



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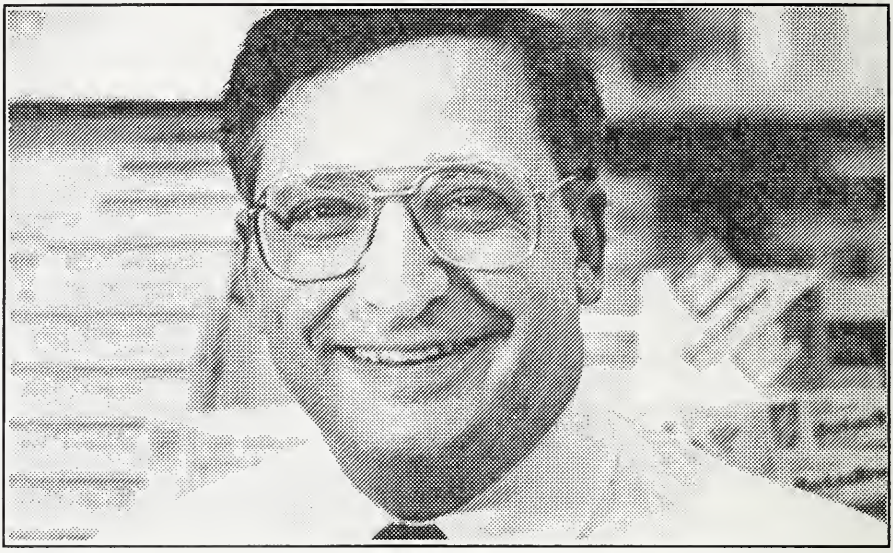
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T/O=Transfer of Ownership
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OMISSION

Kelly Lynnette Hines of Hickory was inadvertently omitted from the list of pharmacists licensed by examination on July 24, 1991 that appeared in the NC Board of Pharmacy column in the August issue of *The Journal.*

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JUST-IN-TIME (JIT) FOR THE PATIENT

A JIT philosophy can provide value added services to contemporary pharmacy practice

This is the nineteenth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

The previous two articles in this series focused on traditional roles of inventory in pharmacies. Today's operations management literature is very negative about those two approaches to inventory management in most settings. The current focus is on **just-in-time** (JIT) inventory systems which use customer shipment schedules to "pull" the inventory into and through the operating system. As we noted earlier, just-in-time does not seem terribly relevant for the retailer-wholesaler relationship.[1] Yet it may be quite relevant for other parts of the system, especially for dealing with patient-oriented drug delivery systems.

JIT System Parallels Drug Distribution System

At the University of North Carolina at Chapel Hill, we are using the case "Drug distribution at Victoria Hospital (B)" in our MBA-level operations management courses. This 1983 case from the University of Western Ontario focuses on the drug distribution system at Victoria Hospital, London, Ontario, Canada. There were five different drug distribution systems in use at once, including a newly installed unit dose system.

The ostensible educational topic in the case is quality control in services. Yet, when I recently used it in a lecture course which emphasized new, mainly Japanese, methods of production planning and control, my students were quite impressed with the unit dose system as an application of the "no waste" principles that spawned JIT manufacturing control systems.

The objective of a unit dose system — to get *only* the right amount of the right drug into the right patient by the right route at the right time — parallels that of a JIT manufacturing control system as described below.

"The phrase *just-in-time* was intended by its originators to imply more than mere delivery just prior to use. The emphasis was on *just*, meaning only what is needed, nothing more. A short definition is "to have *only* the right part in the right place at the right time...the operations of directly serving the patient are involved in this definition."[2]

This was so clear to one class recently that they began to suggest systems that would use bar coding to overcome some of the quality issues outlined in the case.

continued on page 17

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

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Bar Codes Enhance Drug Distribution

The next time we met, one student, a Burroughs-Wellcome employee, brought in an article from the May 1991 issue of *American Journal of Hospital Pharmacy* reporting on a 1990 project at Thomas Jefferson University Hospital in Philadelphia which demonstrated the feasibility of using bar coding in inpatient drug distribution.

Bar codes were attached to each unit dose, which characterized the product identification code, generic name, dosage form, and route of administration. A second bar code was affixed to each patient's drug cassette, which listed patient name and patient identification number and room number.[3]

A unit dose system is a JIT system because it delivers the dose in small (daily requirements) lots as needed. Unused units can be returned and restocked because of the individually wrapped packaging used. The addition of bar coding to the unit dose and the cassette allows for a direct link with the data input source for billing (including credits for returns), for inventory control, and for verification of the drug administration.

The principle findings of this study were that the new system: 1) saved about two worker-seconds per dose despite some repackaging requirements, 2) enabled the use of technicians at $7 per hour instead of pharmacists, and 3) measurably improved filling accuracy.

Even though extensive manual repackaging was necessary to apply the bar codes to each unit dose, it proved to be cost-efficient and improved patient care. The authors pointed out that "the pharmaceutical industry has the requisite technologies to incorporate bar coding at the time of packaging unit doses. Working through various avenues such as professional organizations and purchasing groups, hospital pharmacists must encourage the pharmaceutical manufacturers in this endeavor."[4]

The authors base their recommendation on a number of trends in health care, including: 1) shorter, more therapeutically intensive hospital stays, 2) cost control pressures, 3) greater integration of hospital computerized information systems, and 4) frequent changes in the medications and dosages used in teaching settings.

The authors also point to the savings and accuracy improvements induced once the patient care areas are equipped with bar-coded wrist bracelets and bar code readers. Then, the verification of drug administration, etc., can be automatically done right in the patient care areas!

Bar Code Applications in Community Pharmacy

As this technology emerges from being "gee whiz" technology to a reality in the hospital, we can think beyond to what this might mean for the patient residing in the community, either in a retirement home or in their own home. Such technology should open up many new value added service possibilities for the pharmacist in the community.

What comes to my mind is the plight of the elderly, forgetful, sometimes confused patient at home taking a number of powerful medications. It doesn't take much imagination to visualize a system in which unit dose packaging is available for such patients through the local pharmacy. The local pharmacist would affix a sequence of labels which describe the patient's name, the drug name, the route of administration, miscellaneous instructions, and the date and time of administration for each dose. The labeled doses could then be placed in a cassette-type container for the patient and the unit dose packages retained for verification of compliance by a caregiver or the pharmacist.

The ultimate customer for such systems may be as much the caregiver as the patient. Recent research by my colleague, Dr. Abraham Hartzema and his team at the UNC School of Pharmacy, has shown how much the caregiver in a rest home or home care setting is a potential weak link in the system for the administration of drugs to the patient at the right time and in the right quantities. The labeled instructions could be as much for them as for the patient, since they are often acutely aware of their own lack of training in drug administration techniques.

Conclusion

The potential for combining computer technology, a JIT philosophy, and specialized packaging to provide value added pharmacy services in the community are limited only by the pharmacist's innovativeness. There are many, many possible ways to do a better job of getting the right drugs to the right patient in the right quantities at the right time wherever and however they live. This can be an interesting professional challenge for the future.

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WELCOME, NEW MEMBERS!

The following pharmacists have become members of the NCPhA since the publication of the June, 1991 journal issue. They join more than 2,600 colleagues in the Association who are committed to advancing the interests of pharmacy in North Carolina.

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CORRESPONDENCE COURSE

COUNSELING CONSUMERS ON SELF-THERAPY OF NOCTURNAL LEG CRAMPS



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. describe suspected etiologic causes and aggravating influences for nocturnal leg cramps;
2. discuss therapy for self treatment; and
3. present important information to convey to individuals who wish to self-treat nocturnal leg cramps.

Objectives

At the conclusion of this lesson, participants should be able to:

1. demonstrate knowledge of the suspected causes and aggravating factors of nocturnal leg cramps, and describe physiologic events in their genesis;
2. identify ingredients of OTC products indicated for treating nocturnal leg cramps;
3. understand the pharmacologic and toxicologic considerations, warnings and precautions, and important drug interactions of quinine; and
4. choose from a list important advice to communicate to individuals to assure that self-therapy of nocturnal leg cramps will be maximized.

Nocturnal leg cramps occur in millions of Americans, are not life threatening, and their cause is unknown. They are often referred to as trivial...except by those who experience them! Nocturnal leg cramps are the fourth leading cause of insomnia in America. They are distressing and painful.

Background

Nocturnal leg cramps are sudden, involuntary, spasmodic and unbearably painful muscle contractions that can last up to 10 minutes. They are recumbency-induced and usually begin within a few hours of the onset of sleep. They may be localized to a certain muscle group, or spread to adjoining ones. The calf muscle (gastrocenemius) is most frequently involved. The pain is often called a "charley horse."

Leg cramps most commonly occur in persons of middle age and beyond. They are more prevalent in women. They may occur in persons suffering from venostasis (poor venous blood flow) in the legs, persons with foot deformities and spinal cord disorders, and during pregnancy.

The cramps are referred to as *stremma*, from the Greek term meaning "anything twisted up together." During a leg cramp, the muscles contract violently. The affected area feels extremely hard to the touch, and pain is often described as sharp, shooting, and excruciating. The leg muscles may be tender for 24 hours or more afterwards.

Leg cramps often fail to follow a predictable pattern of severity, duration, or occurrence. They may appear after a daytime session of heavy physical activity or exercise. But they may also appear after a sedentary period. Sufferers report that they may occur regularly for a few nights or weeks, then spontaneously disappear. Other times, they happen nightly, for years. They may occur only once, or repeatedly during the night. They can become hazardous to health when, because of their severity and expectation for occurring, the sufferer is afraid to go to bed at night.

The etiology of profuse bursts of electrical activity in the leg muscles that precede cramping is unknown. Postulated causes include (1) muscle anoxia due to arterial insufficiency or enhanced oxygen requirement; (2) excessive venostasis secondary to sudden emptying of small venules into larger ones; and (3) accumulation of products of muscle metabolism, such as lactic acid. In the latter case, these metabolites may pool due to venostasis.

Cramps can also be caused by stretching or restless leg movement. The majority of victims do not have neuropathic disease. Nocturnal leg cramps occur relatively frequently in athletes and others who exercise vigorously. They are also common in persons with circulatory impairment, but are independent of arterial circulation.

Precipitating factors include water and electrolyte loss. Hyponatremia, hypokalemia, and hypocalcemia all correlate with leg cramps. These conditions can be especially significant in patients on diuretics because of the potential for sodium and potassium depletion. Iron deficiency anemia, prolonged exposure to cold, malignancy, peripheral neuropathy, chronic pulmonary disease, diabetes, diabetes mellitus, and prostatitis are variously cited as precipitating causes. Drugs reported to cause cramping include clofibrate and beta-adrenergic stimulants.

Remedies

Numerous home remedies have been advocated for relieving nocturnal leg muscle cramping. These include wrapping the legs with cloth; applying heating pads, hot water bottles, or cold packs; immersing the affected limb in warm to near-scalding water; and actively massaging the area. Elevating the foot of the bed, using blanket supports to keep bed clothes off the legs, and drinking tonic water (more on this later) are also advocated.

One novel recommendation is to place a three-inch horseshoe-shaped magnet under the affected limb, between the mattress and lower bed sheet. This supposedly alters the course of the electrical current that initiates cramping. So when a cramp begins, the leg is moved over the magnet which prevents the problem.

To avoid daytime cramping and supposedly modify nocturnal cramping, persons who are on their feet for long periods (e.g., pharmacists, cashiers) should stand on a flexible mat. They should also periodically flex their leg muscles by moving about. The procedure that is most frequently recommended is to stand and flex the foot by raising the body onto the balls of the feet, or move the leg. Walking is often effective. These activities stretch the calf muscles and help relieve cramping.

Affected individuals also try various pharmacologic interventions, including analgesics, antihistamines, ascorbic acid, calcium supplements, and quinine. Of these, quinine is most commonly recommended. OTC products that contain quinine, used for preventing and treating nocturnal leg muscle cramps are listed in Table 1.

Table 1
Representative OTC products that contain Quinine Sulfate

Product (Manufacturer)	Form	Quantity
Legatrin (Scholl)	Capsule	130 mg
Quine (Rowell)	Capsule	200 mg
Quinine Sulfate (Lilly)	Capsule	130 mg
Quinine Sulfate (various)	Capsule	195 mg 200 mg 300 mg 325 mg
	Tablet	325 mg
Q-vel Softgels* (Ciba Consumer)	Capsule	65 mg

*Also contains 400 units of vitamin E

Quinine

Quinine has a long and colorful history. It was the mainstay for treatment of malaria during World War II, but its use for this has decreased since then. Quinine remains the OTC drug-of-choice for self-treatment of nocturnal leg muscle cramps. It is also commonly prescribed for this purpose by physicians. As stated earlier, some individuals drink tonic water because of its quinine content to relieve nocturnal leg cramps.

Quinine's use in treating nocturnal leg cramps began in 1936 with a literature citation that the drug successfully relieved leg muscle cramps in myotonia congenita, a rare congenital disorder of generalized muscle rigidity and spasm. This observation was soon extended to a more generalized use — to relieve muscle spasm, and to treat nocturnal leg cramps.

A number of observers have also reported that nightly doses of quinine sulfate 300 mg are significantly superior to placebo in lessening the number, severity, and duration of nocturnal leg muscle cramps.

The National Disease and Therapeutics Index (NDTI) surveys drug usage based on information supplied by office-based physicians. To illustrate the extent of quinine usage, it estimates that the drug was mentioned approximately 175,000 times in 1983. Of these citations, 64 percent were for use in relieving leg muscle cramps.

There have been no large-scale studies undertaken to investigate the precise cause(s) of nocturnal leg muscle cramps. Indeed, clinical evidence to support the effectiveness of quinine in alleviating leg cramps is limited. But quinine's place in therapy is nevertheless well recognized and firmly established. The Medical Letter editors recently suggested that quinine sulfate (64.9 to 260 mg) at bedtime could relieve nocturnal leg cramps, despite the paucity of scientifically-based evidence.

Pharmacokinetic Considerations. Quinine is rapidly, and almost completely, absorbed from the proximal portion of the small intestine, even in persons with diarrhea. Peak plasma levels following a single oral dose occur within 1 to 3 hours. Seventy percent is bound to plasma protein. Quinine is lipid soluble, metabolized to 90 percent in the liver, and excreted primarily in urine. The drug does not accumulate in the body; a dose will be almost completely cleared within 24 hours. Renal excretion is doubled when urine is acidic rather than alkaline. It is normally taken as the sulfate salt.

Mechanism of Action on Skeletal Muscle. Quinine exerts a direct action on skeletal muscle to lengthen its refractory period, and decrease its response to mechanical and electrical stimulation. Tension response to a single stimulus is reduced, and motor end plate excitability is lessened. Quinine can antagonize the action of acetylcholine on skeletal muscle as effectively as curare. Recall that acetylcholine is the neurotransmitter that stimulates motor end plates in skeletal muscle to contract.

Adverse Effects. Taken in therapeutic doses for a short period of time (10 days or less), adverse effects to quinine are rare. Since quinine is a marked local irritant, gastric pain, nausea, vomiting, and diarrhea following larger doses have been mentioned in the literature.

A dose of approximately 4 gm is reported to be toxic, and 8 gm lethal, to an adult. Therapeutic doses taken over prolonged periods, or acute overdose, may cause appearance of symptoms of **cinchonism**. This syndrome includes the classical cluster of nausea and vomiting; dermal manifestations of rash, flushing, pruritus, and angioedema; headache, tinnitus, and hearing and visual disturbance. Visual disturbance includes double vision (diplopia), mydriasis, photophobia, scotomata (empty spots in the field of vision), distorted color perception, night blindness and constricted visual fields. Permanent blindness is rare, but has resulted.

Central nervous system symptoms of toxicity include respiratory stimulation followed by depression, confusion, feeble pulse, and delirium. Fainting spells, cardiac arrhythmias, and myocardial depression are also signs of toxicity. Quinine is an abortifacient. Neutropenia and thrombocytopenia occur on rare occasions following nightly doses of 300 mg for treatment of leg cramps. Renal damage, asthma in hypertensive persons, and photosensitivity reactions have also been rarely reported.

Quinine exerts a direct hypoprothrombinemic action. It may therefore add to the anticoagulant action of warfarin (Coumadin, etc.). This suspected drug-drug interaction is not fully understood, but caution during concomitant administration is advisable.

Quinine also reduces digoxin elimination. In one study, digoxin levels were increased by 75 percent following four days of quinine therapy. Therefore, patients stabilized on digoxin should be monitored for toxicity or therapeutic failure when quinine is added to or discontinued from their therapy.

While still uncommon, the incidence of quinine poisoning is reported to be increasing. Most poisonings are reported in children who accidentally ingest medication prescribed for other family members. Other cases result from attempted abortion or suicide. Poisoning is of special concern because of quinine's long-term effects on vision, and occasional reports of death at fairly low doses.

Dosing. Nocturnal leg cramps are normally relieved by OTC products with doses of quinine sulfate up to 260 mg daily doses, or larger doses by prescription. Some individuals experience prolonged relief following limited therapy of several days to a week.

Quinine has been reviewed by the FDA Advisory Review Panel on OTC Analgesics and Antirheumatic Drug Products. Panel members reported that the drug has analgesic, antipyretic and muscle relaxant actions, but also has an unfavorable benefit-to-risk ratio due to its potential for toxicity. They therefore recommended against self-treatment of nocturnal leg cramps. This evaluation was based on use of doses in the range of 300 to 600 mg, with daily administration up to 2 gm.

Another FDA panel, the Advisory Review Panel on OTC Miscellaneous Internal Drug Products, also reviewed available data. The panel acknowledged that quinine causes adverse effects, but reported that the drug appears to be relatively safe when taken over prolonged periods of time.

This panel based its observations on doses of 200 to 325 mg daily, which are closer to those generally recommended for relief of nocturnal leg muscle cramps. The panel stated further that, in spite of the fact that the drug is both widely prescribed by physicians and used

by self administration for treating nocturnal leg cramps, it has never been scientifically tested to establish its precise therapeutic role. It is therefore recommended that quinine be further evaluated for this use to establish safety and effectiveness. Manufacturers were invited to conduct clinical testing to establish these criteria. Quinine may remain on the OTC market for self-treatment of nocturnal leg cramps with a recommended dosage of 260 mg daily in divided doses, until the studies are complete and FDA makes its final ruling.

Other Drugs

Vitamin E. Several citations in the medical literature recommend the use of vitamin E in treatment of nocturnal leg muscle cramps. In one report, 103 of 125 patients reportedly experienced complete relief, and another 13 had 75 to 90 percent relief of cramping with doses of 300 or 400 units daily. Investigators indicated that their interest in the vitamin was based on earlier serendipitous observation that patients taking it for dermatologic conditions experienced relief of leg cramps. They argued that vitamin E is preferred over quinine because it is safer.

It is generally agreed that vitamin E plays an integral metabolic role in practically all body tissues. It protects vital cell membranes and intracellular structures by preventing lipid peroxidation (antioxidant activity). It also facilitates oxygen use in normal metabolic processes.

There are huge gaps in available knowledge concerning the vitamin's safety. Vitamin E is often purported in the popular press to be safe. These citations indicate that the vitamin is tolerated in seemingly limitless doses and is without undue toxicity.

But the medical literature clearly illustrates that this is not so. Vitamin E causes definite pharmacologic and toxicologic actions. Clinical disorders attributed to its overuse include dizziness, headache, fatigue, nausea and vomiting with abdominal cramps, muscle weakness, mouthsores and chapping of the lips. Thrombophlebitis, hypertension, gynecomastia and breast tumors have also been reported.

The safe and effective dose of vitamin E for prevention and/or treatment of nocturnal leg cramps is not known. FDA will not permit such a claim until its safety and effectiveness are proven.

Counseling Consumers on Therapy of Nocturnal Leg Cramps

Many reports describe the use of quinine in alleviating nocturnal leg muscle cramps. Most neither strongly support nor condemn this use. Data have been generated largely from uncontrolled studies or anecdotal observations. But the fact is that quinine continues to be prescribed for this affliction.

If it is going to "work" quinine will probably act within a day or two of onset of therapy. Short-term quinine therapy is sometimes associated with continued alleviation of cramps after discontinuing the medication. Individuals should therefore stop taking it periodically, following several continuous pain-free nights, to determine whether therapy is still needed.

For quinine to exert maximal activity with as few adverse effects as possible, certain precautions should be taken. Therapy should be interrupted if an individual develops a feeling of ringing, buzzing, thumping, or other strange sensations in the ears, or any change in hearing. Quinine likewise should be stopped if it causes skin rash, bleeding, or discoloration; changes in vision or dizziness; severe gastrointestinal discomfort; headache; or shortness of breath or troubled breathing. These are signs of cinchonism, which warn of impending toxicity.

Quinine should be taken after meals, or along with a snack to reduce occurrence of gastrointestinal discomfort. Doses should be kept at the lowest level possiblewhich affords relief from cramps, in order to minimizie gastrointestinal discomfort.

Quinine should not administered to children under age 12 years without instruction from a physician. Quinine-containing products should be kept out of the reach of children.

Affected individuals should experiment by lying in different positions, and avoid those that are more apt to cause cramping.

Occasionally, cramping may be sufficiently severe to prevent sleeping, walking, or other activities. When this occurs, the individual should consult a physician for a complete medical examination. Such cramping could result from serious pathology, such as hypocalcemia, cirrhosis, or circulatory damage.

Appropriate advice for consumers who purchase OTC products containing quinine for self-treatment of nocturnal leg cramps is to follow the directions explicitly. The recommended dosage for the 130 mg capsules is 2 capsules when leg cramps occur. To prevent nocturnal leg cramps the dose is 2 capsules taken two hours before bedtime. No more than 2 capsules should be taken in any 24-hour period.

For the 65 mg capsules, the recommended directions are 2 capsules after the evening meal and 2 more at bedtime, with no more than 4 capsules taken in a 24-hour period. In either instance, the patient should not self-medicate for longer than 10 days.

These products should not be taken without medical supervision if the person is pregnant or breast feeding, under the age of 12 years, or allergic to quinine or quinidine.

Quinine-containing products can be taken with or after meals to minimize GI tract upset. When leg cramps do not occur for several consecutive nights of therapy, the person should stop taking the product to determine whether it is still necessary.

Cramping that cannot be alleviated with quinine, or other home remedies, may respond empirically to other therapy. This includes opioids, propranolol, chlorpromazine, chloroquine, clonidine, levodopa, aminophylline, pentoxifylline, carbamazepine, verapamil, oral iron, and various benzodiazepine derivatives. ■

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CORRESPONDENCE COURSE QUIZ

Nocturnal Leg Cramps

1. Q-vel Softgels differ from most other OTC products for treatment of nocturnal leg cramps in that the former contains quinine plus:
 a. aspirin.
 b. diphenhydramine.
 c. vitamin E.
 d. ascorbic acid.

2. All of the following mechanisms of action are suggested for quinine in alleviating leg cramps EXCEPT:
 a. lengthening motor end plate excitability.
 b. decreasing the response of muscle to electrical stimulation.
 c. lengthening of the muscle refractory period.
 d. decreasing the response of muscle mechanical stimulation.

3. Which of the following beverages is consumed by some individuals to help relieve nocturnal leg cramps?
 a. Club soda
 b. Coffee
 c. Cola drinks
 d. Tonic water

4. Symptoms of quinine overdose are referred to collectively as:
 a. bromism.
 b. cinchonism.
 c. Parkinsonism.
 d. Cushings.

5. Of the following dosage regimens, which is correct for quinine taken for nocturnal leg cramps?
 a. 30 mg four times a day with meals and at bedtime.
 b. 130 mg after the evening meal and at bedtime.
 c. 260 mg mid-day and at bedtime.
 d. 500 mg at bedtime, with a snack.

6. Of the following, the most prevalent side effect associated with quinine is:
 a. drowsiness.
 b. gastrointestinal upset.
 c. insomnia.
 d. nocturnal enuresis.

7. All of the following products are marketed OTC for relief/prevention of nocturnal leg cramps EXCEPT:
 a. Duraquin.
 b. Quine.
 c. Legatrin.
 d. Q-vel

8. All of the following are reported causes of nocturnal leg cramps EXCEPT:
 a. arterial contractions.
 b. lactic acid accumulation.
 c. muscle anoxia.
 d. venostasis.

9. When counseling consumers on OTC products for relief/prevention of nocturnal leg cramps, it should be kept in mind that all of the following are warning signs that the product should be discontinued and a physician contacted, EXCEPT:
 a. blurred/double vision.
 b. congested/runny nose.
 c. nausea/vomiting/diarrhea.
 d. ringing/buzzing in the ears.

10. Which of the following profiles of electrolyte imbalance is reportedly a precipitating factor for nocturnal leg cramps?
 a. Hyperkalemia and hypernatremia
 b. Hyperkalemia and hyponatremia
 c. Hypokalemia and hypernatremia
 d. Hypokalemia and hyponatremia

AMERICANS TRUST THEIR PHARMACIST

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In this survey of 1,002 adults, pharmacists rank slightly higher than the clergy, who were rated highly by 57% of those asked. Other professions that rate high in ethical standards include physicians (54%), dentists (50%), college teachers (45%), and engineers (45%). ■

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CONTINUING PHARMACEUTICAL EDUCATION (CPE)

Nocturnal Leg Cramps

- Attach a mailing label from *The Carolina Journal of Pharmacy* or print your name and address and mail to CE Test, NCPhA, P.O. Box 151, Chapel Hill, NC 27514.
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of North Carolina Board of Pharmacy approved CPE credit.
- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

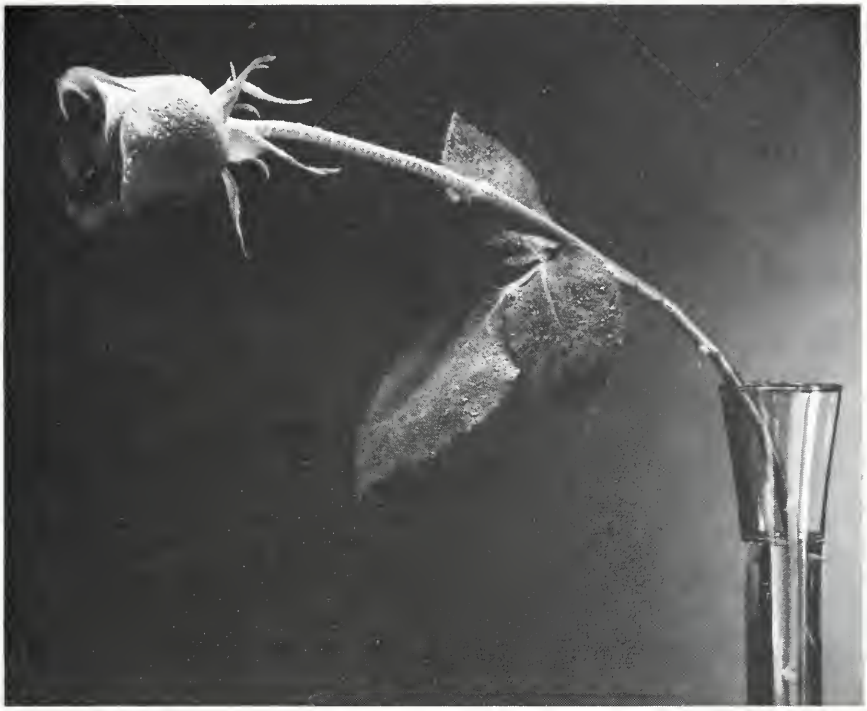
Please circle correct answer

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c d
		10. a b c d

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PHARMACY CALENDAR
1991

Oct. 2–3	NCSHP Fall Seminar, Holiday Inn Four Seasons, Greensboro
Oct. 15	NC Board of Pharmacy Meeting, Institute of Pharmacy
Oct. 20–26	NC Pharmacy Week/National Pharmacy Week
Oct. 23	Pharmacy Museum Committee Meeting, Raleigh
Oct. 24	Woman's Auxiliary Fall Convocation
Oct. 27–31	NARD 93rd Annual Convention, Baltimore, MD
Nov. 18	NC Board of Pharmacy Reciprocity Hearing, Institute of Pharmacy
Nov. 19	NC Board of Pharmacy Meeting, Institute of Pharmacy
Dec. 8–12	ASHP Midyear Clinical Meeting, New Orleans, LA

Future NCPhA Conventions

May 21–24, 1992	Pinehurst Hotel & Country Club, Pinehurst
1993	Morehead City
1994	Myrtle Beach, SC
1995	Asheville

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PHARMACIST: Challenge yourself. Busy apothecary needs dedicated, experienced pharmacist to meet the special needs of patients thru counselling and compounding. Bankers hours, great pay, moving expenses paid, the best career opportunity in N.C. Fayetteville 919-484-6214.

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RELIEF PHARMACIST AVAILABLE: Contact or leave message: Bill Griffin, 1235 Onslow Rd., Raleigh, NC 27606, 919-851-6814.

RELIEF PHARMACIST: 68 bed rural hospital in central North Carolina needs a pharmacist for relief staff position to work one day per week and every other weekend. Experience in unit dose and IV preparation is required. For more information contact: Eugene Simmons, Chatham Hospital Inc., P.O. Box 649, Siler City, NC 27344 or call 919-663-2113.

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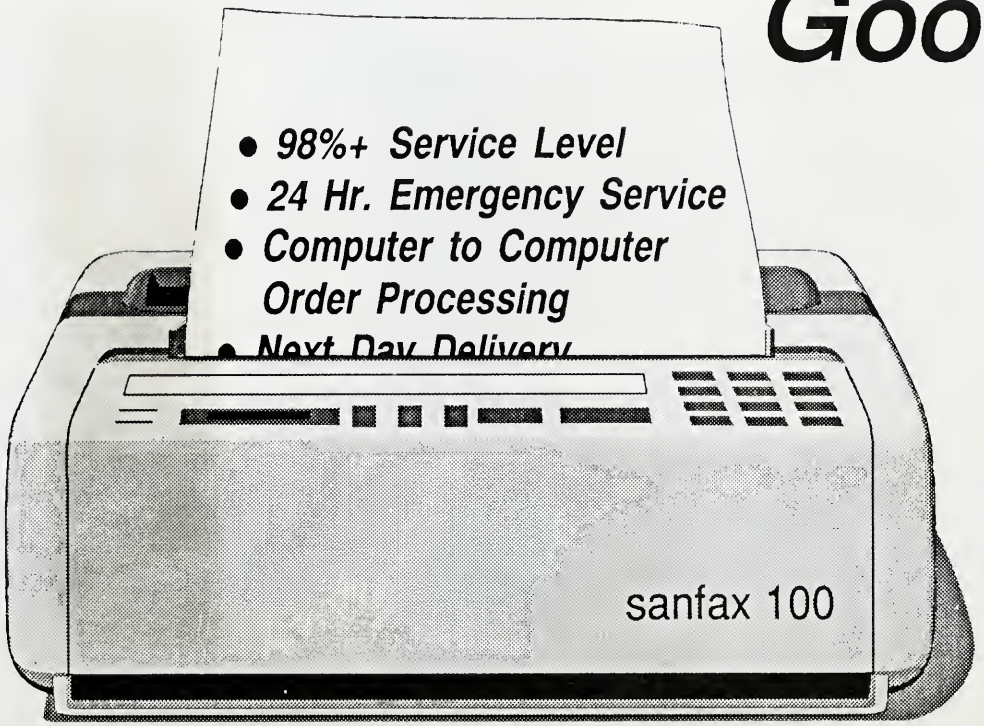


NCPhA Past President Frank Burton, *left*, and W.A. "Teamie" West and the presentation of the Mortar-and-Pestle Award.
Photo by Qualex

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Officers

President
BETTY H. DENNIS
104 Calumet Court
Carrboro, NC 27510
919•962•0030

President Elect
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P.O. Box 147
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919•753•7111

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1111 Hill Street
Greensboro, NC 27408
919•272•7130

Journal Staff

Editor and Publisher
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Editorial Assistants
ERIE C. COCOLAS
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Business Manager
BETSY MEBANE

NCPhA Office

P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343

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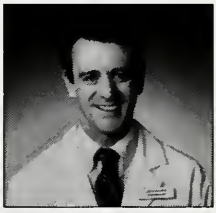
Important figures in diabetes care



Diabetes is the **No. 7** cause of death in the US[1]



Diabetes is the **No. 1** cause of new blindness in persons aged 20-74[1]



Pharmacists see patients with diabetes **5** times more often than do physicians. These customers spend 3 to 8 times more annually in the pharmacy than persons without diabetes.[2]

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1. *Diabetes Surveillance, 1980-1987.* Atlanta, Ga: US Department of Health and Human Services, Division of Diabetes Translation; 1990: chap 3.
2. *Pharmaceutical Services for Patients With Diabetes.* Indianapolis, Ind: Eli Lilly & Company; 1987, 6-13.

PRESIDENT'S PAGE

ARE YOU AN ACTIVE MEMBER?!

Are you an active member,
The player that would be missed?
Or are you just contented
That your name is on the list?
Do you take an active part
To help the work along?
Or are you satisfied
To only just belong?
Do you work with your committee
And get right in and mix?
Or leave the work to just a few
And talk about the "cliques"?
Think this over, friends
You know right from wrong!
Are you an active member
Or do you just belong?

—Unknown author



Betty H. Dennis, NCPhA president

Have you ever said, "Why doesn't the Association do...", or "I wish our Association would ..." If you have, I encourage you to say it again to our officers and committee members. Your input is needed to help our Association grow and advance.

The Committees have been appointed and given various charges. These are listed in this issue. Each member who requested a committee assignment was included. We tried to give each member the first choice requested and were usually successful except in cases where the committee is limited in number by our Constitution and Bylaws or the volume of requests for a particular committee was extremely large. Two new committees, Membership Development and Convention Advisory, have been formed to focus on growth in these areas.

Members of our Association represent approximately one-half of the pharmacists in the State. We need the other half! If each member brought one new member into the Association this year, we could reach this goal. Also, we now have Associate memberships for individuals who are not pharmacists but want to participate and support our Association. Don't forget potential members in this category.

We need active members who participate! Our 1992 Convention is scheduled for May 21-24 in Pinehurst. We want to include programs of interest for all members and double our attendance. Share your ideas with us and make plans to attend next May. You will contribute to the future of our profession and Association, learn and grow as a professional and have fun with many new and old friends. Our local associations are encouraged to let us know what type of programs will be valuable for their members.

Members and committees make things happen in our Association. Be active and get involved! Express your ideas! You can make a difference! •



The W.A. West family. Left to right; Patrick, Thomas, Maxine, Matthew, Teamie, Lynn, Andrew and Dellwood. Photo by Qualex

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WEST HONORED AS 1991 NORTH CAROLINA PHARMACIST-OF-THE-YEAR

Waits Artemus "Teamie" West of Roseboro was honored Friday night, August 23, 1991, as the **"1991 North Carolina Pharmacist-of-the-Year."** Two hundred family members, neighbors, friends and colleagues from across the state attended the Mortar-and-Pestle Award Dinner held in the Fellowship Hall of the Roseboro First Baptist Church.

Betty H. Dennis, NCPhA president, served as master of ceremonies for the program following the dinner. Speakers during the program told of the life-long activities and accomplishments of Mr. West which resulted in his selection for this most prestigious award. West joined a list of forty-four previous recipients of the NCPhA Mortar-and-Pestle Award, which includes his father in 1959. This is the third set of father and son recipients, the other two being Hoy and Whit Moose of Mount Pleasant and John Hood Sr. and Jr. of Kinston.

Program participants were the Reverend Dana F. Slack, Pastor, First Baptist Church; Roseboro Mayor N. B. Walters; Al Mebane, NCPhA executive director and J. Frank Burton, immediate past-president, NCPhA. Special guests included State Representatives Edd Nye and Ed Bowen.

The three speakers told of some of their experiences with Mr. West and how they viewed him. Reverend Slack said he saw Teamie as a Christian, not a churchman. "He is active in his church and a devoted family man, proud of his family." Slack noted that the West family comes to church, and he always thought of Teamie and Maxine as a very special couple. Since Teamie was his pharmacist, Slack always knew that whatever time was required to provide the necessary services would be taken...he looks at Teamie as the epitome of a pharmacist.

Mayor Walters has known Teamie as a friend for many years. There was a down-home atmosphere in Teamie's pharmacy and he was



The current Pharmacist-of-the-Year and previous recipients. Photo by Qualex

always available for help. Teamie's motto seemed to be "if you need to know, ask your pharmacist." The mayor added, "West has been a generous contributor to community projects in Roseboro."

Mebane told of some of the firsts that occurred while West was NCPhA president in 1984-85. The first time the Annual Convention of the NCPhA was held in Chapel Hill, the first time NCPhA rolls went over 2,000 members, the first announcement of Campbell University's intent to start a pharmacy school, the first endorsement of mandatory continuing education by the membership of NCPhA, all took place while West was president. Mebane also told of some of West's travels as president, including his trip to England as part of a continuing education seminar sponsored by the Association. Mr. and Mrs. West were particularly impressed by the clothing allowance provided the president of the Pharmaceutical Society of Great Britain. Mebane described West as a beacon of professionalism, trust and respect—a light that shows the way.

The Mortar-and-Pestle Award plaque was presented to West by immediate Past President Frank Burton.

West concluded the program by thanking his wife, Maxine, and his family for their support through the years. He thanked his church family who has helped him and his family and he thanked his professional family who assisted him in his efforts as NCPhA president. West commented that he knew of no other profession that gave one such a sense of reward for efforts made. He concluded his remarks by singing the following:

"We're pilgrims on the journey of the narrow road
And those who've gone before us line the way,
Cheering on the faithful, encouraging the weary,
Their lives a stirring testament to God's sustaining grace.
Surrounded by so great a cloud of witnesses,
Let us run the race not only for the prize,
But as those who've gone before us
Let us leave to those behind us
The heritage of faithfulness passed on through godly lives.

Oh may all who come behind us find us faithful
May the fire of our devotion light their way,
May the footprints that we leave lead them to believe
And the lives we live inspire them to obey,
Oh may all who come behind us find us faithful.

After all our hopes and dreams have come and gone
And our children sift through all we've left behind,
May the clues that they discover and the memories they uncover
Become the light that leads them to the road we each must find.

Oh may all who come behind us find us faithful
May the fire of our devotion light their way,
May the footprints that we leave lead them to believe
And the lives we live inspire them to obey,
Oh may all who come behind us find us faithful." •

October is "Talk About Prescriptions Month"

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Apex 27502

Jackie Harrell
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Rt. 1 Box 64-D
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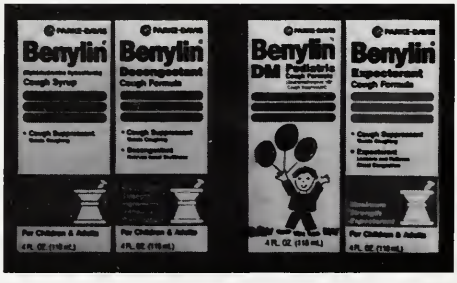
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P.O. Box 564
Buies Creek 27506-0564

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UNC School of Pharmacy
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Chapel Hill 27599-7360

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Advisor
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Cary 27511

Laura G. Burnham
Ex Officio
2957 Buena Vista Rd.
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Wilmington 28406

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NCSHP Liaison
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950 Meadow Lane
Henderson 27536

Virgil McBride, *Advisor*
1748 Parker Lane
Henderson 27536

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Hickory 28603

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Jack G. Watts, *Advisor*
444 Tarleton Avenue
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Barney Paul Woodard
Advisor
P.O. Box 5
Princeton 27569

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Wilson 27893

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8380 Capital Blvd.
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2957 Buena Vista Rd.
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Billy Cameron
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Sanford 27330

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9345 Deer Path Lane
Kernersville 27284

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136 Welsford Pl.
Mebane 27302

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206 Bridle Creek Dr.
Cary 27513-3467

James R. Hall
Rt. 1 Box 64
Efland 27243

A.C. Hartzema
UNC School of Pharmacy
CB# 7360 Beard Hall
Chapel Hill 27599-7360

Jan D. Hirsch
2 Trawick Court
Durham 27713

David T. Hix
235 Burke St.
Gibsonville 27249-2402

Truman Hudson
637 Downey Pl.
Gastonia 28054

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2133 Canterbury Dr.
Burlington 27215

John Mackowiak
623 E. Franklin St.
Chapel Hill 27514

David Meyer
1600 Biscayne Dr.
Greensboro 27410

Gary Newton
Box 53401
Fayetteville 28305

G. Joseph Norwood
UNC School of Pharmacy
CB# 7360 Beard Hall
Chapel Hill 27599-7360

Brian Richard
6716 Low Bush Ct.
Wilmington 28405

Benny Ridout
Box 88
Morrisville 27560

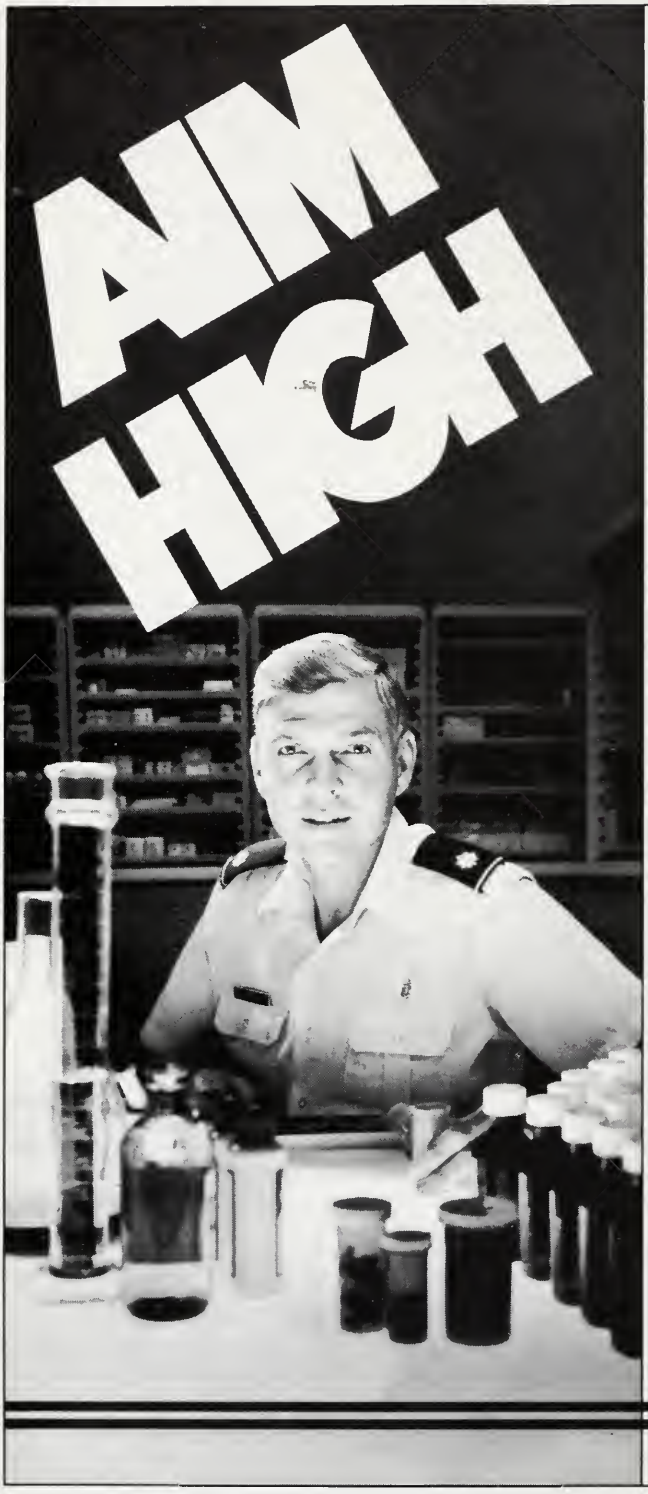
Larry W. Thomas
P.O. Box 245
Dunn 28334

Thomas R. Thutt
905 N. Queen St.
Kinston 28501

Davie Waggett
217 Foxhall Dr.
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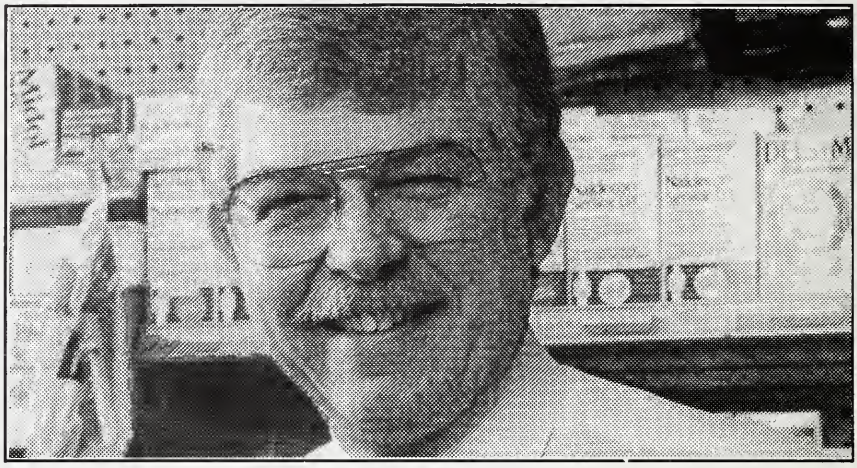


Woman's Auxiliary 1990-91 President Mary Lou Worley and Mrs. Iva Jarrett, at Mrs. Jarrett's 97th birthday party in Asheville. Mrs. Jarrett was the president of the Woman's Auxiliary in 1934 and is the Auxiliary's oldest living member. Auxiliary members of the Western North Carolina Pharmaceutical Club surprised Mrs. Jarrett with a party at Givens Estate in Asheville.



Members of the NCPhA Woman's Auxiliary who attended the party for Iva Jarrett are; left to right; Suzan Maddox, Auxiliary 1991-92 President; Betty Overman; Given Milligan; Viller Beaman; Evelyn Pinner; Eva Glenn; Virginia Shigley; Gloria Rogers and Mary Lou Worley.

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NEGOTIATION AS A BUSINESS MATTER

This is the twentieth in a series of articles for professionals who manage and managers who lead professionals, and those who are both. Pharmacists operate with one license, but fill many different roles in hospitals, chain stores, individually-owned stores, industry, and educational settings. Along the way, they need a variety of management skills. These articles take a broad perspective on management concepts we hope you will be comfortable applying.



Dr. Curtis P. McLaughlin

Nearly every list of the skills needed by a health care executive today includes the art of negotiation. Yet people are very fuzzy about what negotiating skills are. I was recently developing an upper-level undergraduate management course for staff of a teaching hospital. I was to teach most of the sessions, but some were to be taught by senior managers at that institution. One of the topics on our list that I sought to turn over to the practicing managers was negotiation skills, but my colleagues there said no. They argued that many health professionals have the wrong view of negotiation. They think that it is how to get your way and win. Subsequently, I found that my colleagues were right. Negotiating seemed to mean either a power play or winning an athletic event to most of the professionals there.

NEGOTIATION WITHIN RELATIONSHIPS

Most negotiations are not staged contests. They are part of an ongoing business and personal relationship. If Department A enters into negotiations with Department B and dominates the process, Department B will not willingly come back to that table in the future. If that happens repeatedly, Department B is going to catch up, get even or get out. Good negotiation recognizes that the parties have an ongoing relationship that is to be preserved; therefore, there must be a sense of equity if there is to be a real commitment to implementing the agreement after it is made. Remember that one does not get the benefits of an agreement as soon as one gets up from the bargaining table.

The benefits accrue only after the agreement is implemented. Since implementation is such a critical aspect of managing, a negotiator must try to achieve as many of the conditions of a sucessful relationship-based negotiation as possible. Those conditions include the following:

1. Do not negotiate unless there is mutual respect and trust. The agreement is unlikely to be implemented without it.

2. If there is to be mutual respect and trust, there must be a personal relationship. Agreements will be implemented only if the parties

CURTIS P. MCLAUGHLIN is a Professor of Business Administration in the School of Business and Professor of Health Policy and Administration in the School of Public Health at the University of North Carolina at Chapel Hill. *This article has been made possible through an educational grant from Marion Merrell Dow, Inc.*

see the result as a personal commitment. This implies that one should take steps to strengthen social relationships with those with whom you bargain, something that Americans are suspicious of, preferring "arms-length-bargaining." Yet relationships are highly valued, for good reason, in other cultures. "Friends take longer to fall out."

3. Recognize that development of the relationships that make agreements work requires a time commitment. Maybe you and a car dealer can work out a deal on a car in half a morning, but developing customer loyalty that will bring you back again, takes years, some good experiences, and a skillful recovery from any bad ones.

4. There has to be a planning horizon for a relationship. Whatever it is, it will end up being longer than you expected before you thought about it. What you come away from the negotiation with now may be far less important than what you may lose in the future. Are you going to be working together with your opposite number over the long haul? How long? If so, any short run advantage from a deal can cost you a lot later. The names of people that I haven't seen for years and never expected to run across again still pop up as reviewers of my grants or my papers. Had I burned my bridges with them years ago, I would still be paying for it.

5. There has to be something in it for everybody involved. That is hard to stick with in today's climate of tight resources. Fortunately, the parties often have a variety of needs that can be met. One professional is short of cash, while another needs a scarce skill. One wants to be relieved of an administrative irritant, while the other wants to practice some management skills. The best solution allows each participant to feel that some of their specific needs are being met or that they are doing something that they can feel good about.



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6. Put things in writing. Some people may feel that that is a mark of mistrust, but it need not be handled that way. Some experts argue that you may want to put things in writing when you are stuck in the negotiation just to show how much you already have in common, motivating movement over the sticky spots. At the negotiation's close, process a memorandum of record to serves as a basis for checking whether you were both viewing issues the same way. If you both work for the same organization, you don't have to worry too much about the legal contract formalities, but the memorandum of agreement can serve to refresh memories and avoid bad feelings later on.

7. Make allowances for different corporate and professional cultures. This is as true in the hospital or store as it is in global dealings. You have to understand these cultural differences before you can understand what the other party wants and needs in a mutual solution.

8. Recognize that circumstances are going to change. Just as we have said that the psychological contract between employer and employee must include provisions for change, so must the solution produced by a negotiation.

Experts report that one of the biggest mistakes that negotiators make is not knowing what they want out of the process. That sounds crazy but it often happens because people get so caught up in winning the contest that they forget the real objective. For helping professionals there is an additional pressure. One gets so used to taking care of others that one's own needs are forgotten. Yet failing to clearly think through what it is you need out of the process defeats the process in two ways. First, your opposite number does not get a clear indication of your needs in order to respond to them. Second, you can get confused about how the negotiation is going, should you fail to clarify what you are really after.

The literature on negotiation often stresses something called your Best Alternative to a Negotiated Agreement (BATNA). You really cannot negotiate effectively unless you are clear about where you will be without that agreement at any point in time. You have to carefully think through the alternatives and know which are acceptable and which are not before you go to the bargaining table and before you think seriously of getting up and leaving it.

Be sure you remember, however, that there are multiple consequences for any negotiation that is relationship-based. There are, for example, the impact on the issue at hand and the longer-run implications for the relationship. There is a BATNA related to each.

This article has not dealt with the processes of negotiation, only with the relationship aspects. We plan further articles on negotiating. They will deal with more of the process issues in negotiation, including what to do when your opposite number does not believe in relationship bargaining. •





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CORRESPONDENCE COURSE

ADVISING PATIENTS ON INSULIN USE



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to discuss insulin products, and present information about them that can be conveyed to diabetic patients.

Objectives

At the conclusion of this lesson, the successful participant should be able to:

1. identify the various insulin products as to origin, onset and/or duration of action, and purity;
2. exhibit an understanding of how human insulin products are manufactured, how they differ from each other, how they differ therapeutically from conventional insulin products, and when their use is recommended;
3. select the method of choice for monitoring diabetic control; and
4. choose from a list important information to convey to diabetic patients about the correct use of insulin.

The fate of millions of diabetic patients around the world was changed forever with the discovery of insulin in 1921. After decades of trial and error in identifying the cause of diabetes and then isolating insulin, success was finally realized. Diabetics now were optimistic that they could live a long, nearly-normal life.

Today, almost three dozen insulin products are available to individualize treatment of diabetes. Keeping abreast of what is available, and of new developments and products, may at first appear formidable. However, if approached systematically, the topic of insulin is quite understandable.

This month's lesson provides information that will assist pharmacists in answering questions from diabetic patients about various insulin products available.

Scope of the Diabetes Marketplace

An estimated 12 million Americans have diabetes mellitus. Six million are known; the other 6 million are subclinical, and will be diagnosed at some point in the future. Diabetes currently ranks as the third-leading cause

of disease-related death in the U.S. It is also a major cause of blindness, and complications involving the renal and cardiovascular systems, and the central and peripheral nervous systems.

The reported annual cost of health care for diabetes approximates $18 billion. Diabetic patients patronize a pharmacy an average of three times each month, and see a pharmacist five times for every one visit to a physician. They also spend up to seven times more money in the pharmacy than non-diabetic patients. Pharmacists, therefore, are in a unique position to interact with them, and serve their needs.

Treatment of Diabetes

It is generally concluded that when blood glucose concentration is maintained as closely as possible to normal, long-term degenerative complications are minimized. Though diet and exercise programs are cornerstones of therapy, and oral hypoglycemic agents help control many individuals' disease, insulin is the most specific treatment.

It is recommended that blood glucose levels in diabetic patients should range from 70-120 mg/dL preprandially (before meals), and be less than 160-180 mg/dL 90 minutes postprandially. For pregnant women with diabetes, the goal is 60-90 mg/dL preprandially, and 120-150 mg/dL postprandially.

Insulin Products

Source. Insulin products (Table 1) may be grouped by source, purity, and/or onset and duration of action. There are five basic categories of insulin based upon source: porcine (pork), bovine (beef), pork/beef combinations, biosynthetic human, and semisynthetic human insulin. Porcine insulin is closer chemically than bovine insulin to the human hormone, differing from it by a single amino acid. Bovine insulin differs from human insulin by three amino acids. Biosynthetic and semisynthetic human insulins are identical in efficacy to endogenous human insulin.

Onset and Duration of Action. There are three types of insulin based upon onset and duration of action. Products are classed as rapid-acting/short duration, intermediate-acting and duration, and long-acting/long duration (Table 2). Most newly diagnosed patients receive a 100 U/mL insulin product.

Insulin solubility is determined by its crystal size, physical state (amorphous or crystalline), zinc concentration, and type of buffers. Its rate of absorption from injection sites, therefore, can be controlled by altering these factors. To illustrate, absorption is delayed and action prolonged by forming complexes of insulin with certain proteins. The basic protein, protamine, is therefore used in formulation of intermediate-acting and long-acting preparations.

Semilente products contain amorphous insulin. Ultralente products consist of large insulin crystals with a high zinc content. Lente insulin is a mixture of 3 parts semilente and 7 parts ultralente. This provides lente insulin with an onset, peak and duration of action similar to NPH insulin, but it does not contain added protein. Consequently, lente insulins have reduced risk for inciting allergic reactions.

Purity. Insulin purity is defined as the parts per million (ppm) of proinsulin and related contaminants. Contaminants include pancreatic glucagon, pancreatic polypeptide, vasointestinal polypeptide and somatostatin. Early insulin products were relatively impure, often containing more than 10,000 ppm contaminants. All commercial insulin products in the U.S. today contain<25 ppm contaminants.

Insulin products described as "purified" contain, by definition, <10 ppm of contaminants. Human insulins and purified pork insulin products contain <1 ppm of contaminants, and are essentially identical to each other in purity. Purity of insulin products is important in that local adverse reactions and general allergic responses, and insulin resistance, are due to the contaminants, not insulin *per se.* These problems have therefore been minimized, if not eliminated, with the newer insulin products.

All insulin products elicit similar metabolic responses. Switching patients from animal-

Table 1

Commercially Available Insulin Preparations

Product	Manufacturer	Species*	Strength
Rapid-Acting			
HUMAN			
Novolin R (Regular)	Novo	human (SSH)	U-100
Humulin R (Regular)	Lilly	human (BSH)	U-100
Humulin BR (Regular)**	Lilly	human (BSH)	U-100
PURIFIED			
Regular Purified Pork	Novo	pork	U-100
Regular Iletin II	Lilly	pork	U-100, U-500***
Regular Iletin II	Lilly	beef	U-100
Semilente Purified Pork	Novo	pork	U-100
STANDARD			
Regular	Novo	pork	U-100
Regular Iletin I	Lilly	beef/pork	U-40, U-100
Semilente	Novo	beef	U-100
Semilente Iletin I	Lilly	beef/pork	U-40, U-100
Intermediate-Acting			
HUMAN			
Novolin L (Lente)	Novo	human (SSH)	U-100
Novolin N (NPH)	Novo	human (SSH)	U-100
Humulin L (Lente)	Lilly	human (BSH)	U-100
Humulin N (NPH)	Lilly	human (BSH)	U-100
PURIFIED			
Lente Purified Pork	Novo	pork	U-100
Lente Iletin II	Lilly	pork or beef	U-100
NPH Purfied Pork	Novo	pork	U-100
NPH Iletin II	Lilly	pork or beef	U-100
STANDARD			
Lente	Novo	beef	U-100
Lente Iletin I	Lilly	beef/pork	U-40, U-100
NPH	Novo	beef	U-100
NPH Iletin I	Lilly	beef/pork	U-40, U-100
Long-Acting			
PURIFIED			
Ultralente Purified Beef	Novo	beef	U-100
Protamine Zinc Iletin II	Lilly	pork or beef	U-100
STANDARD			
Ultralente	Novo	beef	U-100
Ultralente Iletin	Lilly	beef/pork	U-40, U-100
Promatine Zinc Iletin I	Lilly	beef/pork	U-40, U-100
MIXED			
Humulin 70/30	Lilly	human (BSH)	U-100
Novolin 70/30	Novo	human (SSH)	U-100

* SSH = semisynthetic; BSH = biosynthetic
** Humulin BR is a buffered regular insulin for use in insulin pumps
*** U-500 strength insulin requires a prescription for purchase

derived to human insulin is not always justified, as long as the individual responds well to therapy and side effects are minimal. Current thinking favors the use of human insulin products in newly diagnosed patients, as well as those already using animal-derived insulin (Table 3).

Human Insulin Products

Insulin use is increasing worldwide. It has been predicted that, with the increased demand for insulin, there may eventually be a shortage. This potential problem has apparently been solved with the discovery of how to program bacteria to produce it. Obtaining insulin via microorganism-production may offer an unlimited supply. With it, diabetic individuals will no longer be dependent on the availability of animal pancreata.

Currently, human insulin is produced by two means. The first (biosynthetic human insulin) involves recombinant deoxyribonucleic (rDNA) technology using *Escherichia coli* as hosts. The second (semisynthetic human insulin) involves chemical alteration of pork insulin to form human insulin.

Biosynthetic Human Insulin. Human insulin production was the first commercially successful application of genetic engineering in the pharmaceutical industry. Discovery assured an unlimited supply of insulin for the future, and paved the way for truly improved therapies using "natural" products that are the same as endogenously produced human hormone.

Since 1986, biosynthetic human insulin has been made by inserting the genetic coding for human proinsulin into *E. coli* hosts, which are then grown by fermentation to produce proinsulin. Fermentation is stopped by heat sterilization to eliminate contamination. The connecting peptide is then cleaved enzymatically to produce human insulin that is structurally and chemically identical to human pancreatic insulin.

Semisynthetic Human Insulin. Manufacture of semisynthetic human insulin involves taking pork purified insulin and enzymatically replacing the amino acid alanine with threonine at position 30 on the B-chain. Semisynthetic human insulin production may be limited somewhat in the future in that it depends on the continued availability of pork insulin as substrate.

Table 2

Characteristics of Various Insulin Preparations

Insulin Preparation	Onset* (hr)	Peak (hr)	Duration (hr)
RAPID-ACTING			
Insulin Injection (regular)	0.5-1	2.5-5	6-8
Prompt Insulin Zinc Suspension (Semilente)	0-1.5	5-10	11-16
INTERMEDIATE-ACTING			
Isophane Insulin Suspension (i.e., NPH)	1-1.5	4-12	24
Insulin Zinc Suspension (Lente)	1-2.5	7-15	24
LONG-ACTING			
Protamine Zinc Insulin Suspension (PZI)	4-8	11-24	36
Extended Insulin Zinc Suspension (Ultralente)	4-6	10-30	>36

*Time by subcutaneous injection. Onset, peak and duration of action times are estimates, and can vary widely among individuals.

Insulin Administration

Diabetic patients administer insulin injections tailored to individual needs. They may be controlled on a simple dosing regimen of one or two subcutaneous injections each day, or a more complex schedule consisting of three or more injections per day. Simple regimens typically involve administering a dose before breakfast and/or the evening meal. Usually the insulin is in an intermediate-acting form such as NPH or lente, or a commercial mixture of intermediate- and rapid-acting insulin such as Humulin or Novolin 70/30 (70 percent intermediate/30 percent regular insulin).

The more unstable the disease, the more complex the dosage regimen. These complex schedules provide a dose of rapid-acting insulin before each meal to provide postprandial coverage, and an intermediate- or long-acting insulin to assure basal insulin requirements between meals. Multiple daily injection programs are highly successful in well-motivated persons. They can be a failure in noncompliant patients.

Insulin suspensions should not be shaken before use. This can cause foaming which leads to incorrect dosage. The vial should be gently rolled between the palms of the hands or inverted several times to mix the product.

Adverse Effects of Insulin

Hypoglycemia (insufficient blood glucose levels) is occasionally experienced with insulin therapy. The risk of serious reaction increases with the complexity of the dosage regimen. The extent of hypoglycemia is also directly proportional to the dose of insulin.

Lipoatrophy (wasting away of subcutaneous fat) is reported in up to 55 percent of patients who receive animal-source insulin. It develops when insulin is injected repeatedly at the same site. Lipoatrophy is treated by injecting human insulin in and around the affected site. Within six weeks to six months, the area fills in and the skin regains its normal morphology.

Insulin allergy and resistance is less common today, especially in patients using purified and human insulins. Ninety-seven percent of individuals develop circulating antibodies within a few months after initiating therapy with the older insulin, versus as few as 10 percent with purified pork insulins. Antibody titres in this latter group are also usually significantly lower.

In pregnant women using conventional insulin, antibodies to insulin cross the placenta and increase plasma insulin levels in the fetus. This influences development of macrosomia (large body size) and neonatal hypoglycemia. The potential for insulin antibody formation can be reduced with human insulin.

Self-Monitoring of Blood Glucose

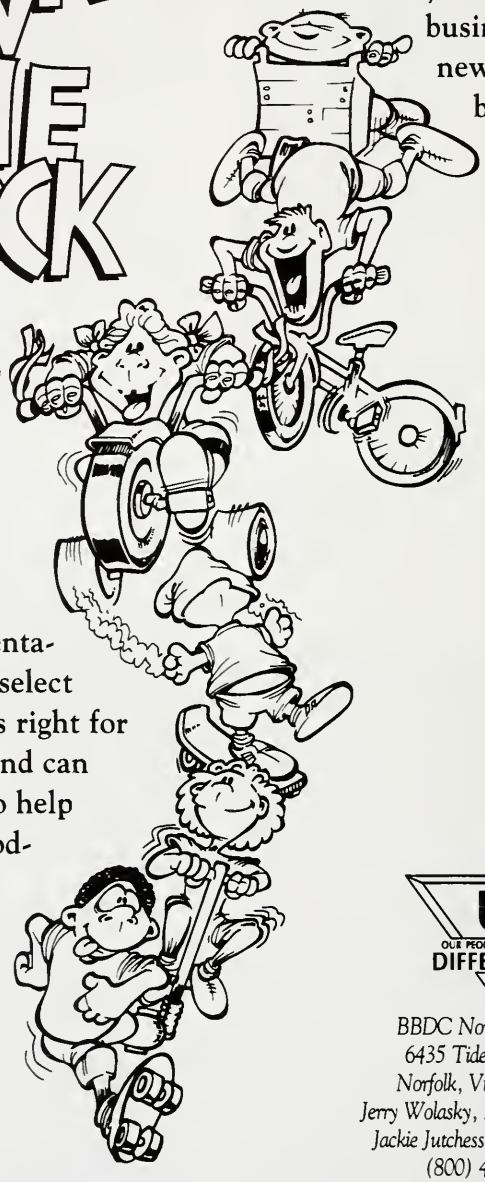
Just as insulin therapy has greatly improved in recent years, self-monitoring of blood glucose (SMBG) has become the accepted method for monitoring diabetes at home and adjusting insulin dosage. Controlling diabetes by monitoring levels of glucose in blood is more therapeutically sound than monitoring glucose levels in urine. A major reason is that blood glucose measurement reports what the

Table 3

Patients Who May Benefit From Human Insulin

- Newly diagnosed insulin-dependent diabetics
- Patients with insulin resistance (i.e., who require more than 100-200 U/day)
- Patients with allergy (local cutaneous reactions, rashes, etc.) to animal-derived insulin
- Patients with lipoatrophy
- Noninsulin-dependent diabetics, or nondiabetics requiring insulin for temporary use (e.g., during surgery, pregnancy, severe infection)
- Patients being treated for ketoacidosis
- Persons receiving total parenteral nutrition

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current glycemic situation is, rather than after the fact as with urine, which may have collected in the bladder for hours. Therefore, the diabetic patient can more accurately determine the metabolic situation, calculate the insulin dose and adjust caloric intake.

SMBG also reduces the length of time of hyperglycemia between urine voiding, and decreases the long-term damage that it causes. To review, one problem that diabetes causes is that during periods of hyperglycemia, glucose enters cells that do not need insulin for transport, including the kidney, central nervous system, liver and crystalline lens. Inside, glucose is metabolized to a number of substances, including sorbitol.

Present in excessive amounts, sorbitol changes the osmotic balance and pulls excessive fluid within. This, then, can lead to long-term adverse effects of diabetes including kidney damage, neuropathy, retinal degradation, cataract formation, etc. Controlling hyperglycemia before it occurs, and quickly reversing it when it happens, can reduce the long-term problems associated with diabetes.

Blood glucose monitoring is better than urine testing, because the patient is using a body fluid that should always contain glucose (improper amounts in diabetes, of course) rather than urine, where it should never be in measurable amounts. In other words, testing urine means that the patient is using a body fluid to make a therapeutic decision long after the endogenous problem occurred.

Another advantage of SMBG is that it is not affected by the presence of other chemicals in the blood, as urine testing is. Reducing agents, oxidizing agents and enzyme inhibitors can cause false-positive and false-negative urine test results. These do not occur with blood testing.

A distinct advantage with the digital electronic monitors is that it is easier to read a number on the display than to differentiate shades of color on the test strip. This is especially true of diabetics in some stage of vision impairment.

While visually-read test strips are still popular, and give better assessment than urine glucose testing methods, they are also less precise than electronic blood glucose meters. Meters are advised for anyone who needs accurate, precise values to adjust insulin dosage, and visually-impaired or color-blind persons.

The American Diabetes Association (ADA) strongly recommends SMBG for (1) persons receiving intensive insulin therapy, (2) women who are pregnant or planning pregnancy, and (3) persons prone to hypoglycemia and who may not experience usual warning symptoms. The ADA also states that SMBG should be encouraged for (1) routine management of diabetics who require insulin, (2) persons with unusually high or low renal glucose thresholds, (3) any unusual insulin resistant state, and (4) any person with diabetes who is motivated to strive for improved control or to alter therapy.

Counseling Diabetic Patients

Diabetic patients should understand the importance of rotating sites of insulin injections, unless the goal of repeated injection at a specified site with human insulin is to reverse lipoatrophy. They should understand that different insulins should not be mixed in the same syringe without checking with a health care provider. And whenever a diabetic person becomes ill, develops a fever, or is vomiting, or changes the diet or type or amount of daily exercise, insulin requirements may also change.

Diabetic patients should understand how to correctly read commercial product labels and follow directions. Commonly-used terminology on food items is confusing and sometimes misleading. For example, the term "dietetic" is not synonymous with "diabetic." Dietetic foods are free of sucrose, but may still contain sugar substitutes that can provide unneeded calories.

Insulin products are not interchangeable with each other; dosage adjustments may be necessary. The dose required to maintain good diabetic control can be significantly lower with purified insulins. Diabetic persons who are transferred from conventional beef/pork com-

bination insulin therapy to equal doses of purified pork or human insulin will risk hypoglycemia if the same dose is given.

Some persons may believe that insulin which is more closely structured to their own endogenous hormone is better. They may therefore favor the use of human insulin over an animal-derived product. Persons who inquire about such change-over in therapy should be advised to discuss this with their physician so that he can monitor the switch. •

CORRESPONDENCE COURSE QUIZ

Advising Patients on Insulin Use

1. The major difference between biosynthetic and semisynthetic human insulin is their:
 a. chemical configuration.
 b. efficacy.
 c. manufacturing process.
 d. potency.

2. The continuous injection of insulin into the same location is most likely to cause wasting away of subcutaneous:
 a. carbohydrate.
 b. collagen.
 c. fat.
 d. protein.

3. The metabolite of glucose that, when produced excessively within cells, is thought to be responsible for the long-term detrimental effects of diabetes is:
 a. galactose.
 b. mannitol.
 c. ribose.
 d. sorbitol.

4. The commercially available animal-derived insulin that is most chemically similar to human insulin is:
 a. beef.
 b. pork.

5. All of the following statements are true EXCEPT:
 a. blood glucose testing is more likely to cause false-positive or false-negative results than urine testing.
 b. blood glucose testing is a more accurate method of monitoring for insulin needs than urine testing.
 c. blood glucose testing is more likely to reduce occurrence of long-term detrimental effects of diabetes than urine testing.
 d. blood glucose testing is better than urine testing because glucose should be in the blood, but it should not be in the urine in measurable amounts.

6. Isophane insulin is synonymous with:
 a. human insulin.
 b. lente insulin.
 c. NPH insulin.
 d. PZI insulin.

7. Which of the following factors has the LEAST effect in determining the solubility of insulin?
 a. Animal source
 b. Crystal size
 c. Physical state
 d. Zinc concentration

8. Of the following types of insulin, which has the quickest onset and peak action, and shortest duration of action?
 a. Lente
 b. Semilente
 c. Ultralente

9. The protein that is used to form complexes with insulin and thereby prolong the action of insulin is:
 a. glucagon.
 b. proinsulin.
 c. protamine.
 d. tryptophan.

10. The recommended preprandial blood glucose levels for pregnant women are:
 a. 30-60 mg/dL
 b. 60-90 mg/dL
 c. 90-120 mg/dL
 d. 120-150 mg/dL

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3. a b c d	6. a b c d	9. a b c d
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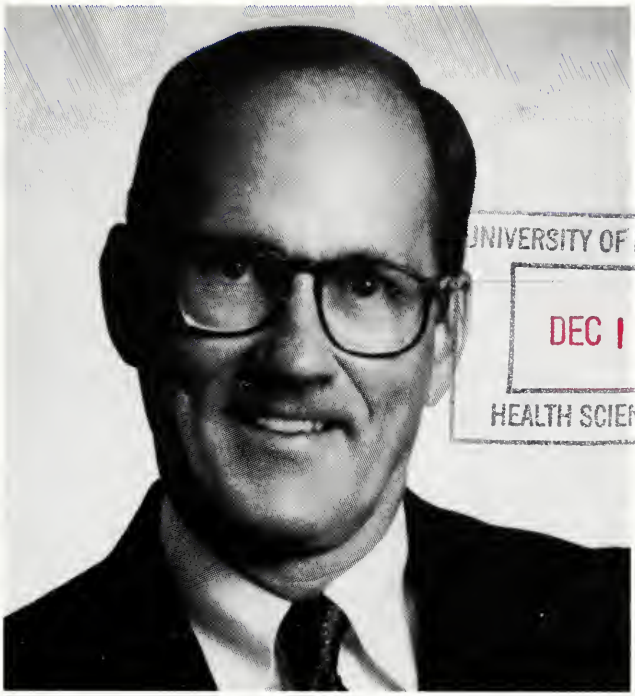
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NOVEMBER 1991 VOLUME 71 NUMBER 11

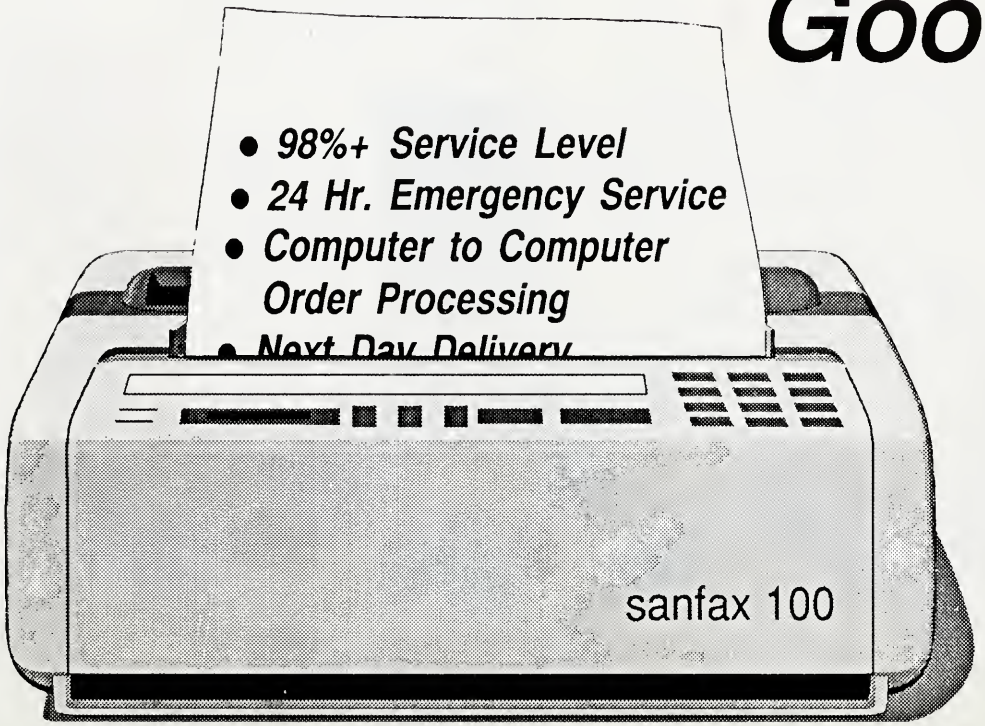


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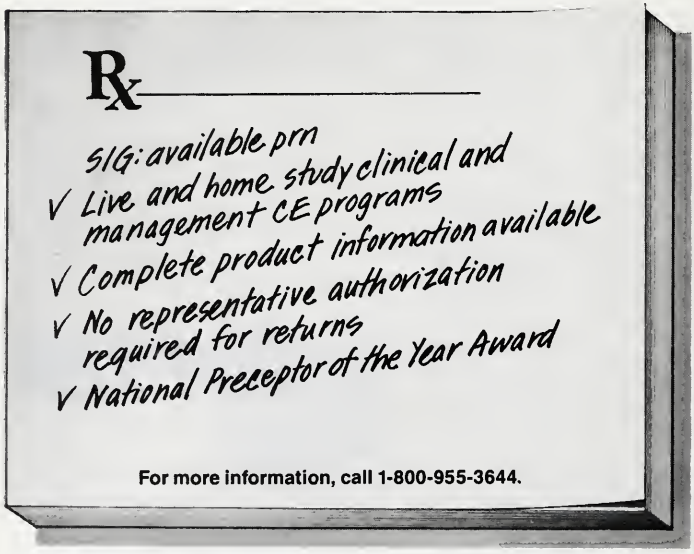
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Officers

President
BETTY H. DENNIS
104 Calumet Court
Carrboro, NC 27510
919•962•0030

President Elect
HENRY L. SMITH
P.O. Box 147
Farmville, NC 27828
919•753•7111

Past President
J. FRANK BURTON
1111 Hill Street
Greensboro, NC 27408
919•272•7130

Journal Staff

Editor and Publisher
ALFRED H. MEBANE III

Editorial Assistants
ERIE C. COCOLAS
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Advertising Coordinator
TERRI M. LITTLE

Business Manager
BETSY D. MEBANE

NCPhA Office
P.O. Box 151
Chapel Hill, NC 27514
919•967•2237 or
800•852•7343

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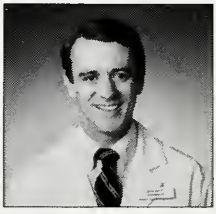
Important figures in diabetes care



Diabetes is the **No. 7** cause of death in the US[1]



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1. *Diabetes Surveillance, 1980-1987.* Atlanta, Ga: US Department of Health and Human Services, Division of Diabetes Translation; 1990: chap 3.
2. *Pharmaceutical Services for Patients With Diabetes.* Indianapolis, Ind: Eli Lilly & Company; 1987, 6-13.

VAUGHN D. BRYSON NAMED CEO OF ELI LILLY

The Board of Directors of Eli Lilly and Company announced the election of Vaughn D. Bryson as president, chief executive officer and chairman of the Executive Committee, effective November 1, 1991. Mr. Bryson succeeds Richard D. Wood, who is retiring on October 31.

Mr. Bryson, age 53, is a 1960 graduate of the University of North Carolina School of Pharmacy where he received his Bachelor of Science degree. He completed the Stanford-Sloan program at the Stanford University Graduate School of Business in 1967.

Licensed to practice pharmacy in North Carolina, Vaughn Bryson has been a member of the North Carolina Pharmaceutical Association since 1961.

After working a year in community pharmacy practice at Kennedy's Drug Store in Gastonia, Mr. Bryson joined Eli Lilly in 1961 as a pharmaceutical sales representative in the High Point district and later held various positions in market research, human resources, distribution, sales management and marketing planning. In 1975, Mr. Bryson became area director for Japan and Southeast Asia for Eli Lilly International Corporation. He was named vice president of Lilly International in 1976, and Canada, Australia, New Zealand and South Africa were added to his list of responsibilities. In 1979 he was transferred to London, where he assumed responsibility for the company's European office as vice president for Europe, the Middle East and Africa.

He became president of Elanco Products Company, Lilly's agriculture product marketing division, in 1982. He assumed responsibility for the medical devices component in 1984 when he was named a group vice president of Eli Lilly and Company and elected to the Board of Directors. In 1986 he was named an executive vice president.

Licensed to practice pharmacy in North Carolina, Vaughn Bryson has been a member of the North Carolina Pharmaceutical Association since 1961.

APHA–NARD–ASHP JOINT STATEMENT ON ENTRY-LEVEL DOCTOR OF PHARMACY DEGREE

APhA, ASHP and NARD released a position paper Friday, November 22, on the entry-level Doctor of Pharmacy degree which included the following points:

1) Support for a NEW doctor of pharmacy degree to prepare pharmacists for entry into practice, rather than focusing on specialty practice,

2) Colleges of pharmacy are strongly encouraged to develop a degree transfer process for current holders of the Bachelor of Science in Pharmacy degree. This should be done with the active support of the American Council on Pharmaceutical Education,

3) Pharmacy's professional associations will develop an institute for the purpose of granting a certificate of Pharm. D. equivalence, for current B.S. pharmacists whose colleges do not provide degree transfer,

4) Encourage greater use of qualified active pharmacy practitioners on the faculties and curriculum committees of colleges of pharmacy,

5) Completion of the NEW doctor of pharmacy curriculum should result in immediate licensure, upon successful passage of a state licensure examination.

(Full text of the Joint Statement will appear in next month's Journal)

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COMMENCEMENT ADDRESS TO THE UNC SCHOOL OF PHARMACY

Robert A. Ingram
Group Vice President
Glaxo Inc.
May 12, 1991

It's my pleasure to be here this afternoon. I know this is a special day in your lives, and I'm sincerely flattered by the invitation to be a part of it.

But I must admit that I'm also a bit wary, because I know the risks associated with delivering a commencement address. After five years of study, the last thing you want to hear right now is another lecture. I know you're eager to proceed with the ceremony, and I suspect a few celebrations are planned for this evening as well.

In that regard, I suppose we should consider ourselves lucky that we're in the Smith Center. I mentioned I would be speaking today to a friend—who, by the way, is a parent and veteran of many a graduation ceremony—and he suggested that the Dean Dome is a great place for a commencement speech. It has a tradition of excellence, plenty of room for spectators—and a 45-second clock.

I promise I'll respect the spirit of the clock. But I do want to take just a moment to share a few thoughts on what the next few years might hold, both for you as professional pharmacists and for the pharmaceutical industry.

And this really points to another risk of a commencement address. I suppose it's traditional to use these occasions to make pronouncements about the future, and about how you, America's best and brightest, hold society's destiny in your hands. But that seldom is the case these days in the field you are about to enter. In the response to rising costs, critics seem to be questioning the health professions at every turn, challenging every decision, looking for someone or something to blame.

More and more, health care is considered a consumer commodity, and consumer activism has thrown a spotlight on the way medicines are made, the way they are distributed, the qualifications of health care providers, and the way providers are compensated. And believe me it's affecting the way the industry does its job, and it will affect the way you do yours.

Now you're about to step into the storm. It reminds me of the story about the man who was charged with drunkeness and, more seriously, with setting his bed on fire and damaging a building. He pled guilty to being intoxicated, but insisted he had nothing to do with the blaze. "Your honor," he said, "I swear the bed was on fire when I got in it."

I'm not suggesting you're about to find yourself in the middle of a raging inferno, or even a burning bed, but I can promise you that things are heating up. And I submit that the most effective way we can douse these sparks of misinformed criticism—which include, not insignificantly, threats to your recognition as a professional—is through patient education.

And I submit further that a lack of awareness—about both the value of medicines and the value that pharmacists add to them—is at the heart of many of our most divisive issues today.

At Glaxo we are clearly committed to a partnership with physicians and pharmacists, and we recognize that each is an absolutely critical member of the health care team—both highly trained, highly dedicated, highly valued professionals.

The special regard we hold for pharmacists is evident in our work force. Well over a hundred pharmacists serve in every area of the company, in medical, marketing, pharmaceutical development, regulatory, legal and sales. Indeed, the office of the chief executive of our London-based parent company, Glaxo Holdings, is also occupied by a pharmacist—one Dr. Ernest Mario, Rutgers Class of '61.

But as a representative of industry, I must admit that we should do more to work with your profession to support patient education. We need to help you help patients understand the pharmacist's role as therapy manager, and the difference that medicines can make in their lives.

Because I am convinced that prescription medicines, along with the pharmacist's role as therapy manager, and the difference that medicines can make in their lives, is an important issue.

Because I am convinced that prescription medicines, along with the pharmacist's counsel, represent the best value in health care today.

And because I am a representative of industry, I would suppose that many of you may be thinking, "Oh sure. What else could he say about pharmaceuticals?" Well, I know I promised not to lecture, but I must bring up a few statistics that help clarify this point. Even if you're familiar with these numbers, I think they bear repeating.

For every dollar spent on health care in the United States, only 5 to 7 cents go to prescription pharmaceuticals.

Since 1965, health care costs as a percentage of GNP have jumped from around 6 percent to around 11 percent. During the same time, pharmaceutical expenditures as a percentage of GNP have remained constant at less than 1 percent.

And when we look at cost-effectiveness — which you'll be dealing with for the rest of your careers as members of P&T committees, as decision-makers in professional associations, and as patient counselors—when we look at cost-effectiveness, prescription medicines stand out.

If pharmaceutical therapy can obviate the need for $30,000 coronary bypass surgery at a fraction of that cost—while allowing the patient to avoid the trauma and lost productivity associated with surgery—that therapy is a good value.

If a prescription medicine can help a cancer chemotherapy patient avoid the violent retching that may follow a treatment and immediately return to his family and job, the medicine is a good value.

"Ok," you might be saying. "Ok, pharmaceuticals are a good value. What's that got to do with me? I don't make them. I don't have to convince anybody." I suggest that it has everything to do with you and every member of the health care team. Because if members of the public—including obviously the legislators and regulators—aren't made aware of the value of medicines, the authority of the health care team to determine appropriate patient care will begin slipping away. In the name of cost savings, the judgment of the physician and pharmacist will become secondary to that of the accountant.

You've probably heard it said that the most expensive prescription is the one not taken at all. I think we can also apply that concept to spreading the word about the value of medicine to both the medical community and to the consumer. Education is never as expensive as ignorance.

In this area, industry and pharmacy are uniquely positioned to help each other. While physicians and industry must share the burden of supplying the information that today's consumers demand, it's the pharmacist who's on the front lines. It's the pharmacist who's in the best position to explain to the patient how

his medicine works, how to take it and what to expect in terms of effects and side effects.

And to the often asked question—what makes this tiny bottle of medicine worth $65?—the pharmacist is in the ideal position to explain that if it's taken correctly, if it cures an illness or avoids a more serious condition later, it's the best investment in health a patient could hope to make.

Such explanations are in the patient's best interests, and in the pharmacist's best interests, too. Because I would think that the more involved a pharmacist is with his patient, the more satisfying his job would be. And in the long run, it may lead to the resolution of some issues young pharmacists are facing today.

Many of those issues center on career and salary. And that's perfectly reasonable. Few of us share the attitude of one of my acquaintances, who simply shrugs and says, "I have enough money to last me the rest of my life ...unless I buy something."

The simple fact of your presence here today reveals a bit more ambition. So it's no surprise that at the annual meeting of the Academy of Students of Pharmacy in March, there was considerable discussion about whether the B.S. degree will soon be obsolete, making the Pharm.D. degree the exclusive passport to greater career opportunities.

It's no surprise that pharmacy graduates are wondering about surveys like the one in *Drug Topics* a few weeks ago, which put the pharmacist's average base salary at just over $45,000 and rising at the rate of 6 percent a year.

It's no surprise you're closely following issues like reimbursement for cognitive services and drug distribution programs, like the one for Clozaril, that bypass the pharmacist altogether.

How is involvement with patients going to influence these areas? How are explanations of the value of medicines going to lead to career growth?

Pharmacists already enjoy an enviable level of trust among the general public; recent polls have shown that. But I suggest that only by translating that trust into greater patient involvement can the true value of pharmacists themselves be demonstrated.

And only in that way—through experience, through lifelong learning, through solid job performance—will a pharmacist create the career opportunities of tomorrow. Only in that way will pharmacists' considerable professional skills in the science of pharmacology and the art of human relations be recognized and rewarded.

And I suspect the pharmacist who maintains his competence and caring will always be in demand, regardless of his academic degree, swings in the national economy, and trends in medical care.

At the risk of oversimplification, I believe success in the health care professions ultimately is determined by one, and only one, standard. And I believe it applies equally to medicine, pharmacy, industry, everybody.

A fellow involved with another pharmaceutical company you may have heard of, a man named George Merck, said it beautifully in the 1950's: "Medicine is for people; it is not for profits. The profits follow and if we have remembered that, they have never failed to appear."

He was speaking about a company. But he might well have been referring to the individual health care practitioner, too.

Amid all the organization and infrastructure that has become a part of America's health care system, amid all the difficult issues and potential divisiveness, we must continue to be guided by the answer to one simple question: Is it good for the patient?

If it's good for the patient, let's do it.

If it's not, let's don't.

If we remember that, I'm convinced the financial rewards and the job satisfaction will follow.

It's not rocket science. But in fact it's probably far more important. And although it's a simple standard, I caution you not to be deluded by its simplicity. Arriving at the answer is easy. It's the action that follows the answer that counts.

There are only three primary colors—red, blue and yellow. Pretty simple. But look what Michelangelo did with them. In music, there are only eighty basic notes. But look what Beethoven accomplished with them.

This afternoon on this stage, there are 171 degrees to be awarded. The patients whose lives you will touch are waiting. Let's see what you will do with them.

There's something about a commencement ceremony that never fails to inspire me. I suppose it's the optimism, the hope, the potential pouring from each of you. But that's really only part of it.

Because when I look at my industry, I realize its foundation is poured of the same material. And I find that invigorating.

Each day everyone involved in any health care field is working toward the same promise you show today, the same hope, the same potential that their efforts will make life better for someone else.

Emerson — who, by the way, worked with only 26 letters in the English alphabet — Emerson wrote that "it is one of the most beautiful compensations of this life that no one can sincerely try to help another without also helping himself."

I believe that thought holds special meaning for health care professionals. No matter how the future unfolds, no matter how close you get to the burning bed, that's a reward that will last a lifetime.

So, congratulations on your degree, and good luck on your national boards next month. Congratulations, too, on your career choice.

Michelangelo isn't the only one who can create a masterpiece. Today, I hope you begin working on yours.

Thank you.

LETTER IN THE NCPhA FILES

12 Month 14, 1886

Mr. E.V. Zoeller

Dear Sir,

Mr. Dillard of the Druggists' Circular has informed me that you have discovered a mistake in the formula for "Chapman's Mixture," page 1029 of *Practical Pharmacy.* The doses of Copaiba and the proportions of the Compound Spirit of Lavender and Spirit Nitre seem large, yet they have been given in doses as large, and in trial, the mixture as printed, seems to stand well. I published it as it was given me – have you a copy of the original? I am very much obliged for the information and will be glad to hear from you.

Yours truly,

Joseph P. Remington

Department of Pharmacy
United States Dispensatory
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1832 Pine St.
Philadelphia

JEFFERSON LEAVES NCPHA FOR NARD POST

Kathryn Kuhn Jefferson, editor of *The Carolina Journal of Pharmacy* for the past three years and NCPhA director of professional affairs, has accepted a position with NARD in Alexandria, VA. Effective September 1, 1991, Jefferson became director of professional affairs for this national pharmacy organization, which represents the interests of independent retail pharmacy.

A native of Kentucky and a 1981 graduate of the University of Kentucky College of Pharmacy, she has been a staff member of NCPhA since April, 1988, when she began part-time employment as managing editor of *The Journal.* Prior to moving to North Carolina in 1987, Jefferson worked as a hospital staff pharmacist in Louisville, KY and as a pharmacy supervisor and director of clinical education at Presbyterian Hospital in Dallas, Texas. In 1989, she was awarded the second George P. Provost Editorial Internship at the American Society of Hospital Pharmacists headquarters in Washington, where she studied for six months. She returned to NCPhA in 1990 and became director of professional affairs as a full-time employee in May.

During her all-too brief career at NCPhA, Jefferson was instrumental in developing the nationally acclaimed video, "Counseling Low Literate Patients," designed to sensitize pharmacists to the problem of reading difficulties among their patients, and techniques to use when counseling these patients. She presented posters at national meetings and was the guiding force who promoted this program to pharmacists across the country. She was the NCPhA coordinator for the "Talk About Prescriptions Month" campaign, sponsored jointly by NCPhA and the NC Society of Hospital Pharmacists. She helped prepare and distribute the "Brown Bag" public relations program, and used billboards, paid radio spots and public service announcements, pharmacists on radio talk shows, and advertisements in local newspapers to promote this feature.



Kathryn Kuhn Jefferson

As director of professional affairs, Jefferson will be responsible for developing and coordinating special NARD projects relating to pharmacy practice. She will be the liaison to the Pharmacy Education Committee and Professional Affairs Committee and will be in charge of the educational components of NARD's national and regional meetings.

Kathryn is completing the requirements towards a Masters Degree in Pharmacy Practice at the University of North Carolina. Her final course work will be taken at American University in Washington. Her thesis will be directed toward developing a clinical clerkship in community-based pharmacies and local ambulatory care pharmacies.

Jefferson may be contacted under her professional name, Kathryn F. Kuhn, at the NARD office, 205 Daingerfield Road, Alexandria, Virginia 22314. Her office telephone number is (703) 683-8200. The NCPhA staff and family wish her the best of good fortune and success in her new opportunity.

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LIVING WILLS AND HEALTH CARE POWERS OF ATTORNEY

This is the second in a series of bimonthly aticles concerning general legal topics. The articles are prepared by Bailey & Dixon, Raleigh, who provides comprehensive services in administrative law, litigation, government relations, and commercial transactions. The Journal *encourages your comments and suggestions for future articles*



Cathleen M. Plaut, J.D.

As health care professionals, pharmacists may receive questions from the public regarding the "right to die" and the withholding of discontinuance of life-sustaining procedures. The North Carolina General Assembly has recognized that an individual's rights include the right to a peaceful and natural death. It has further recognized the fundamental right of an individual to control the decisions relating to his or her medical care, and has provided that this right may be exercised by an agent chosen by the individual. Pharmacists should understand that in North Carolina, an individual can declare his or her desire for a natural death by executing a Declaration of a Desire for a Natural Death (Living Will), and can execute a Health Care Power of Attorney to appoint an agent who has the power and authority to make health care decisions for that individual. A Health Care Power of Attorney may be combined with a Living Will into one document.

LIVING WILLS

In a Living Will, an individual expresses a desire that no extraordinary means of artificial nutrition or hydration be used to prolong life if the individual's condition is determined to be terminal and incurable, or if the individual is diagnosed as being in a persistent vegetative state. In order to be effective, the Living Will must be signed by the individual before two witnesses. It is critical to note the following limitations on witnesses:

1. The witnesses must not be related to the individual or to the individual's spouse;
2. The witnesses must not know or have a reasonable expectation that they will be entitled to any portion of the individual's estate, or have any claim against the estate;
3. The witnesses must not be the individual's attending physician, employee of the attending physician, or an employee of a health care facility where the individual is a patient; and
4. The witnesses must not be employees of a nursing home or group-care home where the individual resides.

The Living Will must be certified by a notary public or a clerk or assistant clerk of superior court.

HEALTH CARE POWERS OF ATTORNEY

The execution of a Health Care Power of Attorney enables an individual to appoint an agent to make health care decisions on his or her behalf when the individual lacks sufficient understanding or capacity to make or communicate health care decisions. The individual can authorize the health care agent to withhold or discontinue life-sustaining procedures and to exercise any rights the individual may have with respect to anatomical gifts, autopsy authorization and the disposition of remains. In a Health Care Power of Attorney, an individual designates the health care

Cathleen M. Plaut is an associate with the law firm of Bailey & Dixon in Raleigh

agent or agents and lists a physician or physicians who shall determine whether the individual lacks sufficient capacity to make or communicate health care decisions. A Health Care Power of Attorney becomes functional when the physicians designated by the individual determine *in writing* that the individual is unable to make or communicate health care decisions.

In order to be effective, the Health Care Power of Attorney must be witnessed and certified in the same manner as a Living Will. The Health Care Power of Attorney is revoked by the death of the individual and may be revoked by the individual at any time, so long as the individual is capable of making and communicating health care decisions. A revocation of a Health Care Power of Attorney is effective only upon communication of the revocation to the health care agent and to the individual's attending physician.

Living Wills and Health Care Powers of Attorney do not guarantee absolutely that an individual's wishes regarding natural death and withdrawal of life-sustaining procedures will be followed. However, both are useful tools that communicate an individual's intentions, and are designed to help resolve difficult issues which often arise from serious injury or illness.

ROGERS STARTS HOMEOPATHIC DISTRIBUTION COMPANY

Michael V. Rogers, Pharm.D., and his wife Niki Rogers, R.N., started a distribution company for homeopathic medicine in Asheville, in March of 1991. The company distributes exclusively to independent community pharmacies.

Homepathic medicines work by stimulating the body's own mechanisms to cure or relieve symptoms. These medicines are generally inexpensive, can be safely self-prescribed, and have no side effects, according to Dr. Rogers. He said they can be be used in conjunction with many other medicines or existing conditions such as high blood pressure, diabetes or asthma.

All products can be sold without a prescription and cover a wide range of medical conditions.

Currently, there are sixteen pharmacies in North Carolina carrying the homeopathic medicines from Dr. Rogers OTC. The company requires no minimum order and will provide the pharmacist with educational and informative materials.

For more information, wite or call:

DR. ROGERS OTC
157 Castlerock Drive
Asheville, North Carolina 28806
704-665-4583

FOR YOUR INFORMATION

Part 1301 - (Amended)

1301-76 Other Security Controls for Practitioners

(a) The registrant shall not employ, as an agent or employee who has access to controlled substances, any person who has been convicted of a felony offense relating to controlled substances or who, at any time, had an application with the DEA denied, had a DEA registration revoked or has surrendered a DEA registration for cause. For purposes of this subsection, the term "for cause" means a surrender in lieu of, or as a consequence of, any federal or state administrative, civil or criminal action resulting from an investigation of the individual's handling of controlled substances.

From August 1, 1991 Federal Register

POISON ALERT

Absinthe and Vincent van Gogh

Art is said to imitate life. It is proposed that Vincent van Gogh was addicted to absinthe and that this had debilitating effects on his physical and mental health, which was reflected in his art.

In France in the 1820's, absinthe was a poor man's drink, confined to the poorest of the poor. Its popularity increased over the next few years and it became "chic" to drink absinthe. By the 1850's and 1860's, Parisians of all walks of life would gather between 5–6 p.m. for "the hour of absinthe," where patrons drank glasses of the drink unabashed.

The drink was said to impart renewed activity to the brain, give new ideas to the world, expand consciousness, and inspire works of imagination. It became a popular drink for writers, actors, artists, musicians, financiers and other professionals. At the height of its popularity, concerns began to arise about the physiologic effects of the liqueur. It was banned in France in 1915 as a result of the tragic consequences of addiction.

CONSUMPTION RITUAL

The drink was a pale green, anise-flavored liqueur that was a distilled alcoholic mixture of wormwood oil and the extracts of angelica, anise and marjoram. Absinthe was consumed with a ritual which added to the fun. The liqueur was diluted with five parts of water which was dripped over crushed ice and a sugar cube, through a crystal colander or a slotted spoon, directly into the serving glass. As the water combined with the liqueur, the mixture turned white as a result of a precipitate which formed and stayed suspended.

The addictive element in absinthe is wormwood oil, which contains thujone. Wormwood oil is derived from an evergreen member of the Artemisia species. The oil had been used for many years as an antheimintic, a stimulant, and a tonic which was said to promote appetite and digestion, speed the circulation and impart a strengthening influence to the entire body.

RECOGNIZED SYNDROME

Absinthism was a recognized syndrome that addicts displayed. While intoxicated, the person was excessively noisy and aggressive. This would be followed by fatigue, depression, severe anxiety, anorexia, intense thirst, and auditory and visual hallucinations. Severe addiction resulted in emaciation, hair loss, yellow-tinged skin, difficult sleep, speech impediment, loss of intellect, paralysis and/or involuntary contraction of the facial muscles and extremities, and death.

Vincent van Gogh was introduced to absinthe by Henri Toulouse-Lautrec in Paris in 1886. He severed his left ear in an act of self-mutilation after suffering from depression (possibly manic-depressive illness) for a 15-month period in 1888. It resulted in hospitalization and self-commitment to an asylum. He continued drinking absinthe because the connection between its consumption and illness was not fully accepted in the medical community. Van Gogh became anorexic, eating little and drinking a lot. He apparently suffered from bouts of depression and hallucinations (possibly schizophrenia) and would paint to "keep my balance" and "to distract my mind." During the last 18 months of his life he created some of his most famous works. Vincent van Gogh shot himself on July 27, 1880 and died two days later.

It is noted that in van Gogh's later works, vivid colors were used, and white objects appear yellow, then violet. This may indicate color distortion due to absinthe.

Van Gogh frequently depicted cypress trees (a species closely related to Artemisia) in his paintings of southern France.

Van Gogh was known to sleep with large amounts of camphor in his pillows to fight insomnia. Towards the end of his life, he would drink paint which was made or thinned with turpentine. At one point, van Gogh had to be physically restrained from drinking a quart of essence of turpentine. Both camphor and

turpentine have structures and activities in the CNS similar to thujone. It has been proposed that van Gogh may have had a physical craving (possibly pica) for these chemicals.

It is ironic that when van Gogh died, his grave was marked with an ornamental shrub closely related to Artemisia. It is reported that when his casket was exhumed for removal to another plot, the roots of the shrub had completely entwined the coffin, "as though they held him in a strong embrace."

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Poison Alert is a communication of the Missouri Poison System. The Regional Poison Center is located at Cardinal Glennon Children's Hospital, 1465 S. Grand Blvd., St. Louis, MO, 63104. Correspondence should be addressed to the Poison Alert Editor of the Regional Poison Center. 772-5200 (in St. Louis) or 1-800-366-8888.

From *The Missouri Pharmacist,* July, 1991.



Congratulations to Mr. John Huguley

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ILLITERACY AND THE PHARMACY PATIENT

by Valerie Grazioso
UNC School of Pharmacy

The winning essay for the Ralph P. Rogers Sr. Pharmacy Administration Award

A young woman with severe hypertension, whose medication regimen was continuously altered, never seemed to get her disease under control. Eventually, her physician admitted her to the hospital for further evaluation. While in the hospital, her hypertension was well-controlled by administered medication. To the dismay of the physician, he discovered the reason for her uncontrollable hypertension was noncompliance due to illiteracy[1]. This is just one of the numerous reports of medical problems stemming from the inability of patients to read and understand their medications' directions.

There are 23 million functional illiterates in the United States[2]. Functional illiterates are people who depend on others to read, write and perform simple math for them. More than half of all Americans read below the tenth grade level[3]. Illiteracy is a growing concern which has a great impact on pharmacy. It is a cause of patients' noncompliance that is often ignored and one which pharmacists, as caregivers, should help to combat. Pharmacists should never assume patients can read with full understanding. They should reinforce written directions for the patient's medications by tailoring their counseling to the specific needs of the patient, especially the low-literate, illiterate and visually-impaired.

When counseling, pharmacists should keep in mind that **the first instructions presented are the ones most often remembered.** In addition to keeping statements concise and logical, pharmacists should allow patients to reinforce their knowledge of the presented information by stating it back to the pharmacist[4]. Patients must possess both knowledge and comprehension in order to comply with their regimens. If patients lack either of these abilities their noncompliance becomes involuntary. The pharmacist should not use technical terms but instead layman descriptions. For instance, one study showed that a term common to pharmacists, "every six hours," was correctly interpreted by only 36% of the patients studied [5].

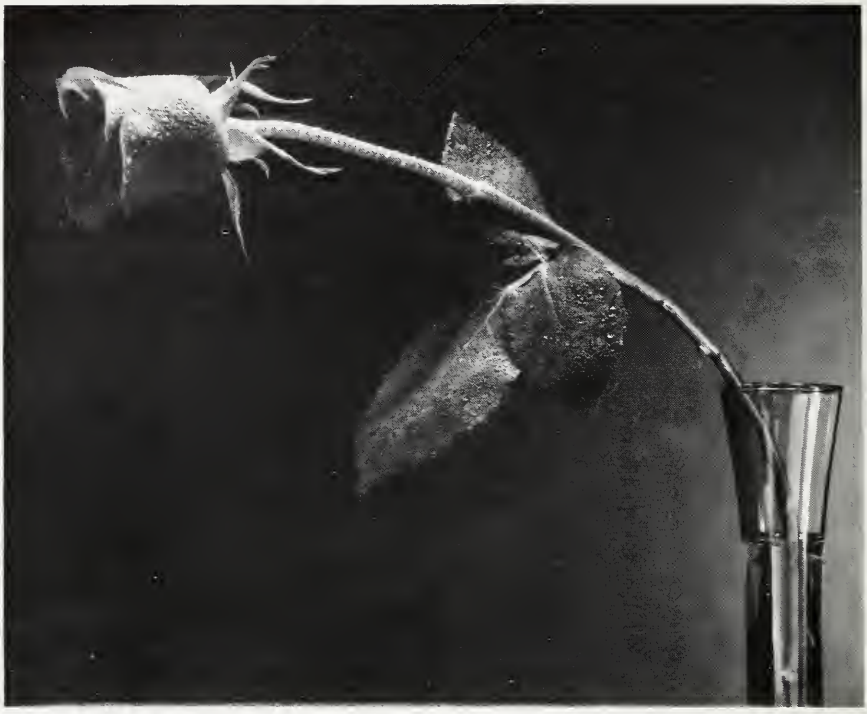
VISUAL AIDS

Pharmacists must be aware of the types of patients they are dealing with, especially low income clinic populations where noncompliance resulting from little or no formal education is high[6]. The combination of lack of education and medications poses a serious threat to the patient's well-being. One study discovered that reading and understanding drug labels requires a surprisingly high level of literacy[7]. In dealing with illiterate and low-literate populations, visual aids are a vital part of their health education.

Pictorial representations have been tested worldwide on nonliterate populations in Africa, India, Papua New Guinea and Paris. The visual aids used in the test were photos, block-outs, line shading, simple line and line color. Different areas of the world use different types of visual aids. In Mexico, photo-novellettes are used, while East Indians utilize line drawings in their health education material[8].

Illiterates process information differently than literates; this fact has caused problems in the studies since the visual aids are constructed by literates. The problems encountered have lead to modifications which have improved the effectiveness of pictures. One problem identified was that while literates take in an entire scheme in one glance, illiterates study a picture in small parts and thus are easily mislead by incorrect parts of the picture. For example, in a Kenyan study, a goat's tail was incorrectly drawn pointing downwards. The participants in the study thought it was a cow[9]. Another problem is that illiterates falter when irrelevant details are included in drawings, diverting their attention away from the main subject. Zambian and Ghanaian studies have shown that the simple pic-

continued on page 19



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tures were understood even when drawn very small, while large, complicated pictures were not comprehended[10]. Furthermore, colors were also deemed important since people relate colors with situations, i.e. black with death and red as a warning[11].

Although pictures are an important part of healthcare for illiterate patients, one must always remember that the concept of a picture is not always self-explanatory. For instance, a picture taken out of context is not easily understood. A study in Kenya showed that a picture of a body part alone was not well understood. When the same picture was accompanied with a drawing of the entire body highlighting the specific part, the participants recognized the part[12]. The expectation that patients will grasp concepts from pictures without help is unrealistic. Pharmacists must counsel and explain how to use medications appropriately. Patients given verbal instructions usually remember them. A study in Delhi tested pictorial representations of words. One midwife told the researchers, "It does not matter what sign you use: tell us once what it means and we will remember."[13]

Illiterates are not stupid; instead they are disabled. Their disability is that they cannot understand written information about their prescriptions or prescriptions for their family, which leads to noncompliance and, sometimes, medical tragedies. This problem can be helped only if pharmacists recognize illiteracy as a problem. This is not an easy problem to recognize since illiterates work hard to mask their disability. For example, they will provide excuses like forgetting their glasses or that they are in too much of a hurry when given a form to fill out; they always avoid reading in front of others[14].

Once the illiterate patient is detected, the pharmacists should employ counseling along with pictorial messages on their medications. The pictures used should, as Fuglesang states, "conform with his natural way of perceiving, identifying and interpreting objects and actions in reality." Pharmacists must make value judgements in determining the specificity of information and counseling required in each patient's situation. Pharmacists have to educate in order to increase the level of compliance, especially among nonliterates. Even though there is no way at present to predict who will be noncompliant, pharmacists can possess awareness of the existence of illiteracy and recognition of the patient as a partner in the therapeutic process. This goal will result in better drug therapy.

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The Carolina Journal of Pharmacy Ownership Statement

Statement required by the Act of August 12, 1970; Section 3685, Title 39, United States Code showing ownership, management and circulation of

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G) Total	2800

I certify the statements made by me above are correct and complete.

Alfred H. Mebane III,
Editor
September 25, 1991

DICKINSON'S PHARMACY

Can patients be trusted? "Our pharmacy has always gone out of its way to accommodate customers, but we continue to lose them because of simple economics," wrote Nashville (TN) pharmacist Wade Wilson, in a July letter to *American Druggist*.

He was rebutting the testimony of the magazine's former editor, Leonard Gross, who urged pharmacists to become aggressive with patient-care services if they want to beat mail-order.

Wilson's point—shared by many independents—was that this idea is naive. "No matter how much service you give, if customers can get a three-month supply for $5 instead of a one-month supply for $70, they will do it."

"Patients, in droves, are simply not fighting to keep their local pharmacies!"

Somewhere else, a few days earlier, I read a heart-wrenching letter from a retired "customer" (ikkh! they're really patients!) apologizing to his pharmacist for going mail-order because he couldn't afford the $2,000 a year he would have to pay otherwise for his maintenance medicines.

Surely you see what's happening here?

Patients, in droves, are simply not fighting to keep their local pharmacies! I don't know what Wade Wilson has done to help them stay, but he probably figures it was all he could reasonably be expected to do—and maybe a lot more.

Simply put, I suspect that he and others just don't trust the average Joe Customer to be loyal when a dollar gets in the way.

In *Pharmacy Practice* a month earlier, former *Drug Store News* pharmacy editor Harold Cohen, R.Ph. (he once owned two independent pharmacies of his own) offered the advice that independents could team up with some of the smaller mail-order companies.

Cohen said such partnerships could let the far-sighted independent survive, since the onward growth of mail-order is inevitable; this way, they could at least get something out of the trend.

Now do you see what's happening here?

Pharmacy is divided—tragically, in my view—between those who seem to believe that if rape is inevitable, they might as well cooperate, and those who would follow Winston Churchill's thinking in World War II—"we shall never surrender!"

I suppose that's human nature. But rape victims seldom win, while Winston Churchill did. Pharmacists must decide which analogy fits. **In times of great peril, all must weld together and fight like we know we can win.**

That's what our country did in the Persian Gulf. Didn't it feel great to be an American? Doesn't it still feel wonderful—even though we maybe should not have pulled back as eagerly as we did? Suppose we had done the other thing—let Saddam Hussein rape Kuwait, and Saudi Arabia too, and just try to cooperate with him?

In the case of pharmacy's war of survival against mail-order dispensing, pharmacists can weld together and win—if they have the will. And that might be the hardest part.

First, just say "No" to third-party plans that present "take-it-or-leave-it" contracts that aren't worthwhile. Most pharmacists don't do this,

as happened recently in Virginia when the Blues offered two weeks to take or leave a contract with an AWP-minus 15% "walk-in mail-order" option that equated to Rxs worth only 20 cents a piece to the pharmacist.

As five-pharmacy owner Dan Herbert said: "I'd rather do that than give up those Rxs to mail-order — I want to keep those total profiles in my store." Herbert felt that the Blues were genuinely trying to meet competition by offering a mail-order option that could be fulfilled in the local pharmacy.

The Blues were in effect saying: "If Employer Inc. out there wants mail-order, we've got to give it to him even if we don't believe in it." With five pharmacies, comparatively minimal maintenance business and a substantial chemotherapy business, Herbert can probably afford to be charitable to the Blues.

Other pharmacies doing 40% to 50% of their business in Blues Rxs will close filling Rxs at 20 cents a piece — if significant percentages of their patients convert to the "walk-in mail-order" option or other plans that penalize local pharmacies.

Back to fighting (how does "Operation Pharmacy Storm" sound?). After just saying "No," pharmacists could get busy with their patients — explaining how important the unseen services are to them. Better yet, do this *before* you have to say "No" — it may avert the need!

Explain how drugs aren't just another grocery item...what profiles do...what would happen if the pharmacies all had to close through lack of support...how creative financing (30-day accounts, self-billing to plans, etc.) can cover Rx costs and keep the pharmacy open...how the insurance industry's huge payrolls (12% of premiums) run up their (the patients') costs in higher deductibles and mail-order delays — have them write their congressman in support of H.R.9's repeal of the insurance industry's antitrust exemptions.

And pharmacists can support their state association's efforts to win the war of public opinion, and legislature opinion, so that patients don't have to face impossible choices.

The Florida Pharmacy Association's patient flyer campaign, *It's Wrong to Lose Your Rights*, packs a terrific punch for just $15 per hundred — 40,000 were snapped up in the first printing.

Don't give up — Never surrender. Patients **can** be trusted if you go about it the right way. You just have to arouse them.

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy–The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., P.O. Box 848, Morgantown WV 26507-0848, for an annual subscription fee of $45.00. NCPhA accepts no responsibility for the views expressed herein as they are those of the author and not necessarily those of NCPhA.

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THE RIGHT CHOICE

Questions have been received through the USP Drug Product Reporting Program (DPPR) asking the difference between a product that bears the "USP" designation on its label and a product that does not. Pharmacists wonder whether the presence or absence of the "USP" designation is any indication of differing product quality.

USP REVIEW

As pharmacists are aware, the United States Pharmacopeia (USP) sets the public standards for the strength, quality, purity, packaging, and labeling of drug products available in the United States. If a USP monograph exists for a drug product, the drug product is subject to the USP standards set for it. This is required by the Federal Food, Drug and Cosmetic (FD&C) Act and by various state laws as well. This is true whether or not the article bears the initials "USP" on the label.

When a product label bears the "USP" designation, it simply is an express representation that a product does meet USP standards. In addition to USP standards, the specifications contained in the NDA/ANDA for a drug product (private standards) also apply. If a drug product differs from existing USP standards of strength, quality, or purity, the product label must state "Not USP" and plainly state its difference from the official product.

For drug products where no monograph exists in the USP or its *Supplements*, the product must only meet the criteria set forth in its NDA/ANDA. "Old drugs" that are not in the USP, and do not hold an NDA/ANDA, need only meet their labeled criteria. For example, if a product is labeled as "Sterile Nose Drops," the product *must* be sterile.

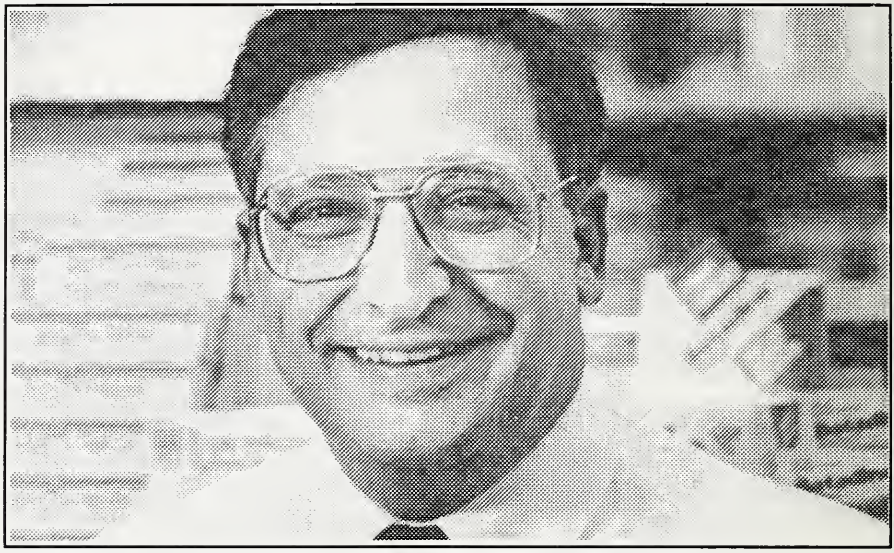
It is also worth noting that some official dosage forms are not regulated as drug products. As previous *Reviews* have pointed out, certain official vitamin/mineral products are regulated as foods. Therefore, USP standards may be enforced differently by the Food and Drug Administration (FDA). However, any product that bears "USP" on its label, whether regulated by the FDA as a food, drug, or even a medical device or cosmetic, *must* meet USP standards.

The standards set forth in the USP are applicable not only at the time of manufacture, but throughout the product's shelf-life. Patients have the right to expect that the medication dispensed to them complies with applicable legal requirements. In selecting drug products, pharmacists are urged to check the USP and its *Supplements* or the USP DI to see if a monograph exists. If so, all products in the marketplace bearing the same generic name as the monograph should meet the requirements set forth therein. If there is ever any question about whether a particular drug product meets pharmacopeial standards, USP recommends that pharmacists obtain assurance from the manufacturer that its product does, in fact, meet compendial standards.

To report problems with drug products, or for further information, call the USP DPPR Program at 1-800-638-6725.



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PHARMACY LAW CAPSULE

by James A. Boyd, Pharm.D., M.B.A.
Assistant Professor,
Department of Pharmacy Practice
Campbell School of Pharmacy



James A. Boyd

THE "RE-USE" OF PLASTIC CHILD SAFETY PRESCRIPTION CONTAINERS

Some pharmacists may be inclined to re-use the plastic "child-proof" caps, vials, and bottles which are returned to the pharmacy for refill. This practice may appear to provide cost savings through decreased consumption of labels, prescription containers and labor. These cost savings are minimal considering potential legal and insurance problems for the pharmacist. The Poison Prevention Packaging Act of 1970, (16 Code of Federal Regulation SS 1700-1704) specifically addresses this issue. "Special packaging for substances subject to the provisions of this paragraph (Act) shall not be re-used." The probability of the locking mechanism failing with plastic safety caps, vials and bottles increases when they are used repeatedly. The plastic closures tend to wear out with continued use which could potentially result in an accidental poisoning of a child. The U.S. Consumer Product Safety Commission addressed the potential problem by prohibiting the re-use of such containers. Most professional liability insurance policies have "exception clauses;" statements like "this policy is void under the following circumstances." One common inclusion is "any willful violation of a law or statute makes this policy null and void."

If a pharmacist violates a law, the insurance company may be released from their obligation to pay damages on his or her behalf. Suppose an injury resulted from an accidental poisoning by a prescription drug which had been dispensed in a "used" child safety container. The question to be asked is, does this action constitute a willful violation of a statute? If the pharmacist in this case routinely engages in this practice it would appear his or her provider of professional liability coverage may be released from any financial obligations. It is important to note that the benefits of the Federal Poison Prevention Packaging Act have been clearly documented. The incidence of accidental ingestion of toxic and potentially toxic substances in children have been substantially reduced since the passing of the Act. (References available upon request.)

DID YOU PARTICIPATE IN "TALK ABOUT PRESCRIPTIONS MONTH?"

If so, we would like to know about it! Send photographs, articles, newspaper clippings, etc. to: *The Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514-0151.* We really do want to know what you did, the response from your patients and customers and suggestions about improvements for next year.

This information will be shared with your colleagues around the state in an upcoming issue of *The Journal.*



This column features news briefs about the people, places and events relating to pharmacy in North Carolina and also about those pharmacists and friends of pharmacy who must be out of the Tar Heel State for one reason or another. The NCPhA staff and The Journal's Editorial Advisory Board welcome and solicit your contributions to this column. Photos (black and white, preferably) are also welcome. Send us your news!

Appointments

Tad Adams, Pharm.D., clinical pharmacist, has been appointed to serve on the Drugdex Information System Editorial Board Adams is employed by Catawba Memorial Hospital.

Doris Osborne was recently elected to serve on the First National Bank and Trust Company's Advisory Board. Mrs. Osborne serves as Director of Pharmacy at Randolph Hospital, Inc.

Fred M. Eckel, professor and head of the Division of Pharmacy Practice at UNC School of Pharmacy, has been selected for an advisory panel that will help the Pew Health Professions Commission in its efforts to reform U.S. health professional education.

In the News

Cornwell Drug Stores, Inc. has opened a new division, Cornwell Care. Cornwell Care will offer sales or rentals of hospital beds, walkers, wheelchairs, bathroom aids, oxygen supplies and more. Therapists are also on staff to offer assistance with these products.

The **Bristol-Myers** company in Morrisville is undergoing a $27 million expansion with 147,000 sq. ft. being added to the present 310,000 sq. ft. plant. The plant manufactures Excedrin tablets, 4-Way Nasal Spray, Comtrex Liquid, Excedrin PM Liquid, Ban Roll-on and Ban Solid, Bufferin, Comtrex tablets and caplets, Congesperin and No-Doz.

The Medicine Shoppe in Dunn, owned by **Prescott Godwin**, offered free take-home colon-rectal cancer test kits to its patients. This was an effort to help the Dunn community become more aware of the importance of regular health checks.

George Peal, pharmacist and owner of Medical Park Pharmacy, recently expanded his services to include a home IV service. This offers residents of Carteret County the ability to receive chemotherapy, IV antibiotics and IV nutrition therapy in their homes.

Novo Nordisk of Denmark, the world's largest manufacturer of injectable insulin, has purchased the Loch Pharmaceutical facility near Clayton. The company plans to begin construction in the Fall of 1991 and anticipates completion of the redesigned facility by mid-year 1992. Full scale production of insulin is expected by the first quarter of 1993.

Crisis Control Ministry of Winston-Salem recently received a grant of $151,000 from Kate B. Reynolds Poor and Needy Trust to operate its free pharmacy.

Baptist Hospital, Winston-Salem, and its pharmacy department have been awarded a Pharmacy Innovation Project Award by the Sun Health Alliance of Charlotte.

Honors, Awards, Citations

Henry L. Smith of Farmville was chosen as "Eastern NC's Outstanding Citizen" for the week of July 13, 1991. Salutes to Smith were aired on WNCT-TV during the week. Smith is the co-owner of Carolina Medical Products Company and he is president elect of the NCPhA.

Abraham G. Hartzema, associate professor of pharmacy administration at the UNC Pharmacy School, was one of two winners in the 1991 National Quality Scholars Competition sponsored by the Health Sciences Institute. Dr. Hartzema's entry described a UNC-CH program under his direction that was established to improve the quality of drug therapy management in North Carolina's rest homes.

Don Blankenship, Pineville, is one of three pharmacists chosen to be featured in the new Eckerd Pharmacy commercials which began airing in September. Don is a member of the NC Pharmacy Museum Committee and works at the Eckerd store # 2698 in Pineville.

W. Whitaker Moose, Mt. Pleasant, was installed as a member of the NARD Executive Committee at the Annual Meeting recently held in Baltimore.

Allen Lloyd and daughter **Evelyn Lloyd** were both elected to the Town Board in Hillsborough in the November 5th elections. Father was top vote-getter and daughter was close behind in second place. Allen has served for 26 years and now has Evelyn by his side on the board. This may be the first father-daughter pharmacist duo to serve in this capacity in the state.

Mitchell's Discount Drug, Eden **(Rus Mitchell)** was selected as one of the Outstanding Independent pharmacies in America in the category of *Pharmacy Services* by *Drug Topics* magazine. Sedgefield Drug in Charlotte **(Elliott Giffen)** was chosen in the category of Nonpharmacy Services. The winners are listed in the October 28, 1991 issue of *Drug Topics*.

Weddings

The wedding of Jeanna Marie Baxter of High Point and **Joseph Mark White** of Mocksville was June 1, 1991 in Courtney Baptist Church. The bridegroom is a pharmacist for Revco Drug Stores in Mocksville.

Melodie Dawn Bowen and Richard Dean Seagle were united in marriage May 25, 1991 at Ormondsville Free Will Baptist Church of Ayden. The new Mrs. Seagle graduated from the UNC School of Pharmacy and is a pharmacist at Revco.

Vikki Watts was married on May 18, 1991 to Dan Stocks of Shallotte, N.C. She is a 1988 graduate of UNC School of Pharmacy and is employed by Kerr Drugs in Shallotte. The couple is now residing at Ocean Isle Beach, N.C.

Sally Eldeana Crews of Greensboro and Kenneth Edwin Blackburn of Winston-Salem were united in marriage on May 18, 1991 in 16th Street Baptist Church in Greensboro. The new Mrs. Blackburn is a graduate of the UNC School of Pharmacy and is a pharmacist at Rite-Aid Corp. in Greensboro.

Local Associations

New officers of the **Wayne County Pharmaceutical Society** have been installed: president, Rick Sessions; vice president, Charles Norris; secretary, Allison Neal; and treasurer, Sherry Denning.

Died

Sherman Keith Poff, Greensboro, died Monday, August 26, 1991. Poff was 38 years old and a 1976 graduate of the UNC School of Pharmacy. He reciprocated to North Carolina in 1985 from Georgia where he had previously been employed.

THE GREAT WHITE LIE

or how America's hospitals betray our trust and endanger our lives; by Walt Bogdanich, published by Simon and Shuster

A book recently published with fifteen pages devoted to the N.C. Board of Pharmacy's involvement with the Charlotte Memorial Hospital and the death of two patients. A book worth reading, debating and digesting. Available at your local bookstore.

AN OPEN LETTER TO NC PHARMPAC MEMBERS
(and all North Carolina Pharmacists)

September 12, 1991

Dear PharmPAC Members:

I must inform you of some changes that have taken place within the NC PharmPAC Organization.

When Jack Watts assumed the presidency of the North Carolina Board of Pharmacy, he felt it best that he step down as PharmPAC's executive secretary. Fortunately, the Board of Directors of PharmPAC was able to persuade Laura Burnham, to become executive secretary. I know that all of you will give Laura the same support and help that you have extended to Jack in the past.

We at PharmPAC owe a special debt of gratitude to Jack Watts for the countless hours that he has spent for PharmPAC. His many hours of traveling around the State speaking to various organizations on behalf of PharmPAC is greatly appreciated.

For those of you that are new members of PharmPAC, it is important to understand that PharmPAC, in accordance with the State laws and regulations that govern PACs, can only contribute to campaigns of candidates for State offices. Last year, our contributions for the primary and general elections totalled $17,550 and we were very fortunate in that most of the candidates supported were elected. PharmPAC historically has given preferential treatment for requests for contributions that come from PharmPAC members.

Let me also take this opportunity to thank those of you who personally delivered PharmPAC checks to candidates in your area. Whenever possible, the Board prefers that the local Pharmacist hand deliver the PharmPAC check to the candidate.

Laura Burnham, our new executive secretary, has had a distinguished career in Pharmacy and has served on many Pharmacy committees at local and state level. We are extremely fortunate that she has accepted this position.

Please remember that your PharmPAC contribution goes directly to the candidate and that although PharmPAC can't lobby, one effort compliments the other. We feel that Pharmacists' presence and acceptance in the Legislature is more important now than ever before. Please continue your support for PharmPAC and please urge your other friends in pharmacy to do likewise. Due to our heavy participation in last years election, funds are at a low point and your contribution is essential!

Thank you for all your support.

Sincerely yours,
Jimmy S. Jackson, R.Ph.
Chairman
North Carolina Pharmacy
Political Action Committee
(NC PharmPAC)

DID YOU PARTICIPATE IN "TALK ABOUT PRESCRIPTIONS MONTH?"

If so, we would like to know about it! Send photographs, articles, newspaper clippings, etc. to: *The Carolina Journal of Pharmacy, P.O. Box 151, Chapel Hill, NC 27514–0151.* We really do want to know what you did, the response from your patients and customers and suggestions about improvements for next year.

This information will be shared with your colleagues around the state in an upcoming issue of *The Journal.*

CORRESPONDENCE COURSE

COUNSELING PATIENTS ON PARKINSON'S DISEASE



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to:

1. explain the physiologic and biochemical considerations involved in Parkinson's disease;
2. discuss current therapy for treating this disorder; and
3. summarize important information to convey to patients about their medications and disease.

Objectives

At the conclusion of this lesson, successful participants should be able to:

1. demonstrate knowledge of the usual signs and symptoms of the disorder;
2. choose from a list drugs used to treat Parkinson's disease, their mechanisms of action, adverse reactions, precautions and warnings, and factors that influence activity;
3. exhibit an understanding of why multiple drug therapy is warranted for some persons; and
4. choose from a list important points to convey to persons receiving a prescription drug for treatment of Parkinson's disease.

Over 400,000 Americans have Parkinson's disease. Parkinson's disease is a progressive neurodegenerative disorder that has well established clinical and pathological features. Dr. James Parkinson (1817) first described it as "the shaking palsy." Charcot in the late 1800's, referred to it as "Parkinson's Disease."

Signs and Symptoms

Parkinson's disease normally develops insidiously, generally beginning between ages 45 and 65. It may appear earlier, but fewer than 10 percent of patients display symptoms before age 50. Males and females are equally affected.

Clinical hallmarks include: tremor, rigidity, bradykinesia (slowed movement), and gait and postural abnormalities. Symptoms are often relieved when the patient is at rest.

Tremor is the initial symptom in 60 to 70 percent of patients, and approximately 90 per-

cent of all sufferers experience this at some point during the disease. The hands are most commonly affected, with the legs, jaw and tongue also involved. Unilateral at first, tremor usually becomes bilateral with time. The hand becomes flexed, with the distal joints in extension. Tremor in the fingers give the patient an appearance of rolling a pill between the thumb and index finger. This results in the designation "pill rolling tremor." While embarrassing, the tremor is not disabling. It may worsen during periods of stress or emotion.

Rigidity accompanies muscle aches and stiffness. It is frequently seen in the neck and back, and may be accompanied by occipital (back of the head) headache. The term "cogwheel rigidity" describes a diagnostic characteristic of passive movement of the involved rigid extremity which appears to have a "ratchetty" quality.

Bradykinesia may be reported early in the disease as a slowing or lessening of ability to undertake normal (automatic) activities such as eating, dressing and bathing. Manual dexterity is reduced, making common movements extremely difficult. Movement loss includes lack of swinging the arms when walking, decreased frequency of swallowing which results in accumulation of saliva in the mouth with drooling, reduced blinking frequency, and a fixed facial expression which is called a "masked face." The patient's body appears flexed at the head, trunk, and extremities. This causes a stooped posture with head bent forward, legs flexed at the knees and arms bent at the elbows resulting in poor balance. A slight or sudden unexpected movement can result in falling. Multiple contusions and fractures are common.

Because of the flexure of the body and loss of automatic functions, including natural swinging of the arms, walking becomes difficult. Often the patient increases his pace to prevent falling or losing balance. The Parkinson patient has trouble coordinating his feet in concert with the rest of his body, and this gives him a "start hesitation" or appearance of frozen motion. These, and other signs and symptoms, are outlined in table 1.

An accurate prognosis of parkinsonism is often difficult. Many patients deteriorate slowly, while others show dramatic decline in physical and mental activity in a relatively short period of time.

Table 1
Signs and Symptoms of Parkinson's Disease

Micrographia (small handwriting)
Hypophonia (weak voice)
Dysarthria (articulation disturbance)
Constipation
Edema of the feet
Seborrhea of scalp and forehead
Autonomic dysfunction
Orthostatic hypotension
Urinary incontinence
Impotence
Sensory symptoms (numbness, coldness, burning, akathisia, pain)
Hearing impairment
Dystonia
Psychiatric abnormalities
Dementia and depression
Speech (monotonic, slow)
Presence of Lewy bodies

Etiology

The exact cause of Parkinson's disease is unknown. There is insufficient evidence to positively link blood types, cancer, coronary heart disease, cerebral atherosclerosis, viral infections, vaccinations, exposure to drugs, fumes, gases or radioactive materials, alcohol consumption, or animal contact with the disease. Heredity is generally dismissed as a contributing factor, although this has not been totally ruled out. About 50 years ago, one-half or more of all patients were victims of encephalitis acquired from an early bout of epidemic influenza.

It has been proposed that premature aging of central dopaminergic neurons is the cause. Research confirms that cells within the substantia nigra area of the brain decrease in number with aging, as do dopamine receptors and dopamine synthesizing enzymes. On the other hand, if the etiology were as simple as the theory proposes, then most or all people who reach advanced age would develop symp-

toms of Parkinson's disease. Although aging is a risk factor, it is not the etiologic cause.

There is intensive research underway to identify an environmental toxin cause. At this point, the strongest statement on etiologic causes is that Parkinson's disease is multifactorial in origin and might result from a combination of numerous environmental toxins in persons genetically predisposed.

"Parkinson-Like" Syndrome. Any drug that depletes dopamine can cause extrapyramidal symptoms, commonly referred to as Parkinson-like symptoms. These include reserpine, haloperidol, metoclopramide, and some phenothiazine derivatives. It is not uncommon for patients taking large doses of phenothiazines to require concomitant therapy with antidyskinetics such as benztropine (Cogentin) or trihexyphenidyl (Artane) to attenuate drug-induced Parkinson-like symptoms.

The Action of Dopamine. Dopamine is a neurotransmitter that controls physiologic functions centrally, and peripherally in the vascular system, kidney, and GI tract. Neurons stimulated by dopamine are "dopaminergic." There are two known types of receptors: D-1 and D-2. D-2 activity is most closely related to clinical response in Parkinson's disease. In the brain, dopamine and acetylcholine produce opposing effects — one stimulates activity and the other decreases activity. Together, they counter each other to control motor movements. Parkinsonism results from either insufficient dopamine, or excessive acetylcholine in the brainstem. Therefore, treatment is aimed at increasing dopaminergic activity or decreasing cholinergic transmission.

Monoamine Oxidase. There are at least two forms of monoamine oxidase (MAO) enzyme in humans. These are termed MAO-A and MAO-B. MAO-A is distributed to greatest extent peripherally in the gastrointestinal lining. MAO-B is found in large degree within the brain, but neither is restricted to peripheral or central sites per se. Human platelets are a rich source of MAO-B. Strong evidence suggests that platelet enzyme levels reflect the concentration of MAO-B in the brain. This should allow future research to be better focused.

Therapy of Parkinson's Disease

Therapy of Parkinson's disease involves numerous facets. These include drugs, controlled exercises, and much support and encouragement. There is no cure. At most, treatment offers symptomatic relief.

Currently available drugs to treat Parkinson's disease will benefit most patients as opposed to non-drug therapy. With introduction of selegiline (Eldepryl), it may now be possible to halt the progression of the disease.

Table 2 presents an overview of currently used drugs listing major pros and cons for each agent. Most patients require multiple drug therapy to achieve optimal symptomatic relief.

Levodopa. Prior to the availability of levodopa, approximately 30 percent of all Parkinson patients were disabled or dead within five years of the onset of disease. By 10 years, mortality and morbidity increased to over 60 percent. Mortality rate overall was three times that of the normal population. Levodopa resulted in drastic delaying of disability and reduced mortality. There was initial hope that the drug would actually halt disease progression, but this did not happen. Today we know that, while levodopa significantly improves life expectancy and quality for the first 5 to 6 years of treatment, after about 10 to 12 years of chronic therapy, benefit decreases and may be lost in many people.

Levodopa is a metabolic precursor to dopamine. Dopamine is not absorbed across the blood-brain barrier. Therefore, it is not possible to treat parkinsonism by administering dopamine. Levodopa readily crosses from the peripheral circulation into the central nervous system. Within the brain, levodopa is decarboxylated into dopamine. Decarboxylation also occurs peripherally, leading to unpleasant adverse effects including nausea, vomiting, and diarrhea. For this reason, the decarboxylase inhibitor carbidopa (i.e., Sinemet) is given concurrently to block the reaction. This results in higher brain levels of dopamine, and reduced peripheral dopaminergic activity. Today, therapy with levodopa alone is rarely initiated in newly diagnosed patients.

Levodopa is most active during the first five

Table 2

Important Features of Antiparkinson Therapy

Therapeutic agent	Advantages	Disadvantages
Antidyskinetics (Anticholinergics)	Effective for tremor, dystonia, and rigidity. Long-term side effects.	Limited effectiveness for bradykinesia and im-
balance.		
Amantadine	Effective for parkinsonian symptoms. Useful in combination with other drugs.	Often has limited period of efficacy. Frequent dose-related side effects.
Levodopa	Can reverse cardinal parkinsonian features. Sustained effectiveness common. Possible improvement in memory and mood.	Frequent development of dyskinesia and on-off symptoms with chronic use.
Levodopa/ Carbidopa	Same as for levodopa alone, with fewer peripherally mediated side effects. Longer duration of dose-by-dose effects.	Increased cost compared to levodopa alone. Possible increased incidence of dyskinesia and on-off symptoms when compared to levodopa alone.
Bromocriptine and Pergolide	Primary and added benefit for all parkinsonian symptoms. Longer duration of dose-by-dose effect than levodopa. Lack of on-off effects and dyskinesias with chronic monotherapy.	Less effective as monotherapy than levodopa. Expensive in optimal dose for some patients.
Selegiline	Extends dose-by-dose effects of levodopa. Might retard progression of Parkinson's disease.	Enhances dose-related levodopa side effects.

years of therapy. As the disease progresses and drug therapy continues, each dose produces correspondingly decreased activity. This is referred to as the "wearing off" effect. Some patients also experience fluctuations in activity that are unpredictable and erratic, referred to as the "on-off" phenomenon. Additionally, abnormal involuntary movements (dyskinesia) increase. Selegiline, pergolide, and bromocriptine find their greatest use in treating these drug failures.

Many specialists advise that levodopa/carbidopa should be the initial therapy of Parkinson's disease, and that it be given as long as possible to control the disease. Others recommend that drug therapy with levodopa/carbidopa be withheld until the disease reaches its severe form. The idea is that benefit from levodopa/carbidopa is limited.

Even with all the benefits, combination levodopa/carbidopa therapy still results in a number of adverse effects. These may be due to a combination of pharmacodynamic and pharmacokinetic factors.

Diet can significantly alter levodopa efficacy. For optimal effect, levodopa must be taken on an empty stomach or with a light snack. Amino acids in food compete with the drug for active transport into the blood. They may also change gastric pH or gastric empty-

ing time, and there is evidence they compete with levodopa for entry across the blood-brain barrier. Patients ideally should eat small meals no sooner than 20 to 30 minutes after dosing. This insures sufficient time for drug absorption, maximizes the chance that the stomach will be empty by the time the next dose is administered, and reduces the amount of competitive amino acids.

Bromocriptine. Bromocriptine (Parlodel) is a potent, long-acting D-2 dopaminergic drug. It is a useful adjunct to levodopa therapy, especially in persons with declining drug efficacy, and those who experience random fluctuations in levodopa activity. Adding bromocriptine is one means to reduce total levodopa dosage, and thereby reduce the incidence of adverse reactions.

Bromocriptine is used in some persons as sole drug therapy. It is generally believed that bromocriptine alone will not bring about the same activity as levodopa alone. Because it may induce fewer abnormal involuntary movements, and has a longer duration of action, it may be the drug of choice for responding patients.

Bromocriptine may induce dyskinesia but the outcome is generally mild and continuous, unlike the dramatic on-off pattern with levodopa. In many patients, when bromocriptine is added to levodopa therapy, fluctuations in the short duration response to levodopa disappear because the dosage of levodopa is oftentimes reduced.

Pergolide. Pergolide (Permax) is a mixed D-1/D-2 agonist. It is especially beneficial during later stages in Parkinson's disease when levodopa response is deteriorating. Also, it is useful when clinical fluctuations become uncontrollable.

Pergolide does have its own variety of adverse effects including dyskinesia and symptomatic postural hypotension. Most can be modified by decreasing the dose, or by giving a dopamine antagonist such as metoclopramide (Reglan).

Antidyskinetic Agents. These are mildly to moderately effective in selected patients. Drugs include trihexyphenidyl (Artane), benztropine mesylate (Cogentin), biperiden (Akineton), procyclidine (Kemadrin), and diphenhy-dramine (Benadryl). Antidyskinetics were popular prior to introduction of levodopa, mainly because they were all that was available. They are still useful in some patients, especially those with tremor, although levodopa and newer drugs have largely supplanted their use. They may have an additional therapeutic effect when combined with levodopa or other therapy. Antidyskinetics are the treatment of choice for drug-induced parkinson syndrome.

Antidyskinetic drugs are anticholinergic agents that block muscarinic receptor sensitivity to acetylcholine. Some drugs, including benztropine, also increase dopamine levels within the striatum by blocking synaptic dopamine reabsorption. Antidyskinetic drugs block parasympathetic transmission peripherally, and this is a cause of annoying side effects such as dry mouth, blurred vision, urinary retention, and constipation. Antihistamines also share many of these activities.

Amantadine. Amantadine (Symmetrel) exerts antiparkinson activity by increasing dopamine release in the brain. It also produces antidyskinetic activity.

Amantadine is not metabolized, but excreted intact in urine. Persons with renal dysfunction may require lower dosage. Extreme caution must be observed when it is used concurrently with antidyskinetics because of additive adverse effects on mental function. Outcome of therapy is often temporary, and described as mildly to moderately effective.

Selegiline. Selegiline (Eldepryl) appears to be one of the most promising new drugs for treatment of Parkinson's disease. It is known as deprenyl elsewhere in the world, and may be prescribed by this name because much of the literature refers to it as such. Selegiline inhibits MAO-B. At doses higher than 5 mg b.i.d., selegiline loses its selectivity and will inhibit MAO-A as well. The implication of this is that the drug may then expose the patient to the same interactions as Parnate and other classic MAO inhibitors.

The mechanism of action has been referred to as "suicide inhibition." This pharmacologic designation refers to a chemically reactive

group which is selectively activated by the target enzyme. It then converts to a highly reactive chemical intermediate that irreversibly binds to and inhibits the enzyme. Consequently, "suicide inhibitors" are not active per se until they are acted upon by a specific target enzyme. For selegiline, the drug that binds reversibly at the active site on MAO. Through a catalytic mechanism, the drug is then converted to its reactive form, which then permanently binds to the active site on the enzyme. At this point, the enzyme is irreversibly inhibited. Only subsequent synthesis of new enzyme can replace it. In studies involving platelets, MAO-A activity is still absent 24 hours after stopping the drug and does not appear to return completely until 2 to 3 weeks later.

Alone, selegiline has little direct antiparkinson effect in most people, although some will benefit from sole selegiline therapy. It is often described as a valuable drug for causing a "smoother," more sustained response from each dose of levodopa. In some patients, administration of selegiline early in the disease can delay the need for levodopa therapy for several years and extend its usefulness.

Approximately 70 percent of a dose is rapidly absorbed, and peak plasma concentration occurs 30 to 120 minutes following administration. It is converted into three metabolites: amphetamine, methamphetamine, and N-desmethylselegiline. This suggests that selegiline may be addicting. Addiction potential is unlikely since the amphetamine metabolite is the levo-isomer. This has activity of one-quarter or less than that of dextroamphetamine, and no problems have been seen in years of clinical trials and world-wide use. Selegiline and metabolites are excreted primarily through the kidney, along with some fecal excretion.

The most commonly reported adverse effects are similar to levodopa. They should be expected since its action is to inhibit MAO-B, allowing for increased dopaminergic activity.

Unlike inhibitors of MAO-A, foods that contain tyramine or other pressor amines (e.g., aged foods and beverages) do not induce a hypersensitive response with usual therapeutic doses. Patients must be convinced to take the prescribed 10 mg/day dose, and not experiment with more. Higher doses of selegiline may have some inhibitory activity on MAO-A.

Other Therapy

Tocopherol (vitamin E) is under study because of the postulated causative role of environmental neurotoxins with possible oxidative mechanisms within dopaminergic cells that, in turn, cause cellular death. The hypothesis states that interfering with oxidative mechanisms will slow disease onset. A clinical study is currently underway to test this hypothesis.

One departure from pharmacologic intervention is to implant **tissue transplants** of adrenal medulla or fetal cells into the nigrostriatum or caudate nucleus of the affected patient. There are numerous questions, and certainly controversies, about this procedure. To illustrate, the adrenal medulla may not be the correct tissue to transplant. The source of fetal cells is of concern. The role of immuno-supression therapy and at what point tissue transplants be undertaken are in question. Whether tissue transplantation should be tried, instead of antiparkinson drugs, is controversial. There is little evidence to support tissue transplant therapy at this time. Most patients have not experienced significant improvement.

Patient Information

April is designated as Parkinson's Disease Awareness Month. This affords pharmacists numerous opportunities to answer questions from persons suffering from the disorder, or others who are interested in it. But counseling on Parkinson's disease does not need to be restricted to the month of April — it's important year-around.

The importance of careful adherence to medication and exercise schedules cannot be overemphasized. Drug therapy does relieve symptoms and prolong onset of serious stages of the disease.

Exercise is essential to maintain muscle tone and strength, and to bolster self-esteem.

Regular exercise should be as much a part of a Parkinson disease patient's daily routine as are medication regimens.

Psychological support is extremely important since many patients will get progressively worse, even with therapy. Also, it may depress them to see other patients with advanced parkinsonism.

A professional development program made possible by an educational grant from

SEARLE

CORRESPONDENCE COURSE QUIZ

Parkinson's Disease

1. Bradykinesia that occurs in Parkinson Disease refers to:
 a. excessive movement.
 b. obsessive movement.
 c. slowed movement.
 d. uncontrolled movement.

2. Which of the following drugs is most likely to affect the action of monoamine oxidase?
 a. Amantadine
 b. Bromocriptine
 c. Pergolide
 d. Selegiline

3. Antidyskinetics used in treatment of parkinsonism-induced tremor reportedly block receptors sensitive to which of the following neurotransmitters?
 a. Acetylcholine
 b. Dopamine
 c. Norepinephrine
 d. Serotonin

4. Levodopa is the metabolic precursor of:
 a. carbidopa.
 b. dopamine.
 c. levonorepinephrine.
 d. dopa decarboxylase.

5. Patients taking high doses of which of the following therapeutic agents are most likely to require concomitant administration of drugs that attenuate Parkinson-like symptoms?
 a. Antidyskinetics
 b. Monoamine oxidase inhibitors
 c. Phenothiazines
 d. Tricyclic antidepressants

6. The dietary component that is most likely to alter levodopa efficacy is:
 a. amino acids.
 b. carbohydrates.
 c. fiber.
 d. triglycerides.

7. Of the following actions, the goal of therapy of treating patients with parkinsonism is to decrease:
 a. cholinergic activity.
 b. dopaminergic activity.
 c. histaminergic activity.
 d. serotonergic activity.

8. Patients taking which of the following drugs should be counseled NOT to exceed the prescribed dose of 5 mg twice a day?
 a. Amantadine
 b. Diphenhydramine
 c. Pergolide
 d. Selegiline

9. Drugs that cause a "Parkinson-like" syndrome are most likely to do so because they deplete or interfere with action of:
 a. acetylcholine.
 b. dopamine.
 c. epinephrine.
 d. serotonin.

10. The concentration of MAO-B in the brain can be estimated by measuring its level in:
 a. granulocytes.
 b. leukocytes.
 c. macrophages.
 d. platelets.

Cut out or Reproduce and Mail

CONTINUING PHARMACEUTICAL EDUCATION (CPE)

Parkinson's Disease

- Attach a mailing label from *The Carolina Journal of Pharmacy* or print your name and address and mail to CE Test, NCPhA, P.O. Box 151, Chapel Hill, NC 27514–0151
- Completed answer sheets may be returned on a monthly or less frequent basis for grading.
- **This is a member service. Non-member tests will not be graded nor CPE credit hours given.**
- NCPhA will maintain a copy of your completed CPE tests and upon successful completion of each program, will issue a certificate for one (1) hour of North Carolina Board of Pharmacy approved CPE credit.
- If more than two (2) questions are answered incorrectly, the test is failed. You will be given one (1) opportunity to submit a second answer sheet.

Please circle correct answer

1. a b c d	4. a b c d	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c d
		10. a b c d

Evaluation of material: Excellent Good Fair Poor

Name _____

Address _____

BURROUGHS-WELLCOME CONTRIBUTES TO MEDICATION AND LITERACY CONSORTIUM

Burroughs-Wellcome recently donated $10,000 to support a project designed to improve knowledge and compliance with medications in persons with low literacy skills. The first phase of the work will be a study to identify needs, problem areas, and appropriate methods for providing medication information to patients with low literacy skills. Dr. Hanna Fingeret, Executive Director of Literacy South, an internationally known expert on adult literacy, will be conducting the study. With 20% of North Carolina's population having low literacy skills, literacy is a major statewide concern. Literacy has been a focus of the Board of Pharmacy, the North Carolina Pharmaceutical Association and Auxiliary for some time now.

Interest in the issue of literacy and medications in the Division of Adult Health of the North Carolina Department of Environment, Health and Natural Resources has developed as a result of participation in federal initiatives designed to explore strategies to reduce hospitalizations and institutionalizations in high risk patients receiving home care. Medication use and misuse are significant factors resulting in hospitalizations as multiple studies have documented. This interest in the Division of Adult Health led to the formation of a statewide consortium on literacy. In addition to the Division of Adult Health, members include the NC Board of Pharmacy and the North Carolina Pharmaceutical Association, the North Carolina Medical Society, Literacy South, the Governor's Council on Literacy, the UNC School of Medicine Program on Aging, the UNC School of Pharmacy, Burroughs-Wellcome Co. and Glaxo Inc. The consortium is co-chaired by Marjorie Allen, M.D., M.P.H., a volunteer with the Division of Adult Health, and David R. Work, J.D., R.Ph., executive director of the Board of Pharmacy.

Interested groups or individuals are invited to participate with the consortium. Call David Work, J.D., R.Ph., executive director, Board of Pharmacy (919/942-4454) or Barbara Fleming, M.D., Ph.D., physician consultant, Division of Adult Health (919/733-7081).



Josiah R. Whitehead, Burroughs Wellcome Co., second from the right, is flanked by the co-chairmen of the Consortium, Dr. Marjorie Allen and David R. Work. Also pictured are Al Mebane, executive director, NC Pharmaceutical Association and George Moore, executive director of the NC Medical Society.

HARMON CARLYLE MCALLISTER

Harmon Carlyle (H.C.) McAllister, age 82, died Tuesday, October 8, 1991 in the University of North Carolina Hospitals. A native of Mount Pleasant, Mr. Mac was a legend in North Carolina pharmacy, having served as secretary-treasurer of the N.C. Board of Pharmacy from 1943 to 1976.

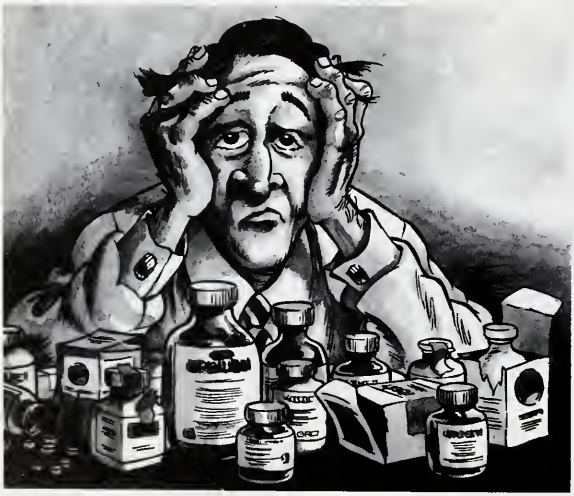
Upon graduation, McAllister went to work as the pharmacist at Watts Hospital in Durham. He was later employed as an inspector for the NC Board of Pharmacy and became a member of the Board of Pharmacy in 1944, serving until 1957. Mr. Mac was secretary treasurer of the Board from October 1945 until March, 1976. He worked at local pharmacies part-time, "to keep his hand in" while employed by the Board.

McAllister was a leader in pharmacy at both the state and national level. He served on many committees of the North Carolina Pharmaceutical Association and helped develop some of the internship programs which were fore-runners of current programs. Mr. Mac was a member of the American Council on Pharmaceutical Education and the American Association of Colleges of Pharmacy, serving as chairman for boards in 1953 and 1969. He served as chairman of the House of Delegates of the American Pharmaceutical Association in 1968, chairman of the Legislative Committee and the Nominating Committee.

Mr. McAllister was president of the National Association of Boards of Pharmacy in 1961 and chairman of the Executive Committee in 1962.

A Life Member of the NCPhA, he was inducted into the N.C. Pharmaceutical Association Hall of Fame in Pharmacy, North Carolina pharmacy's highest award, in 1980.

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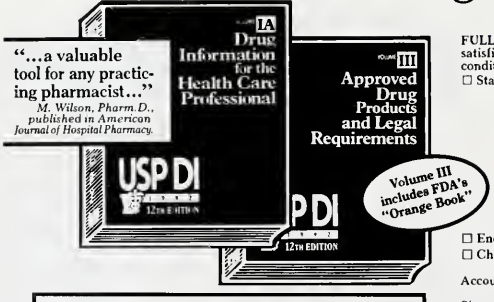
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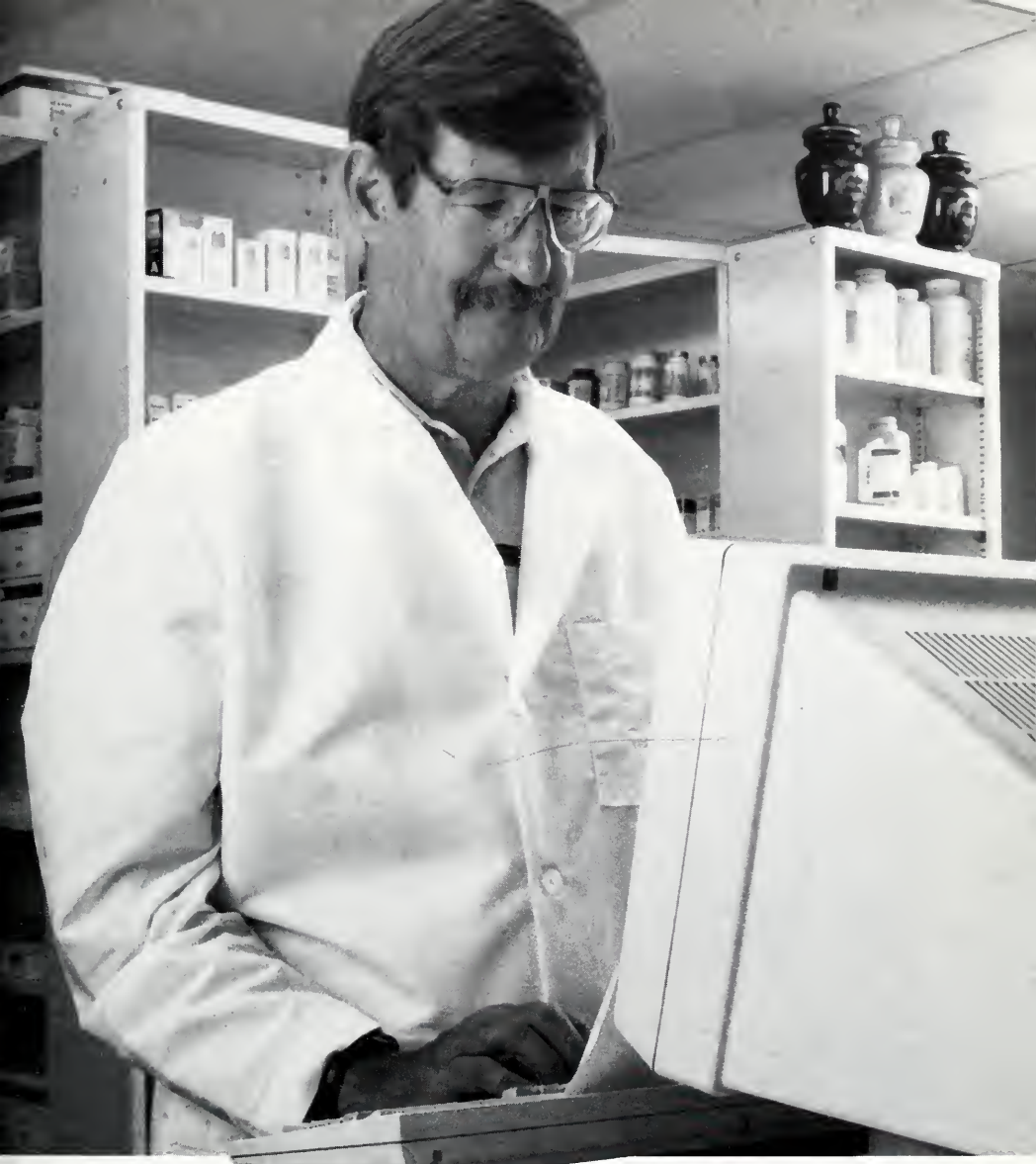
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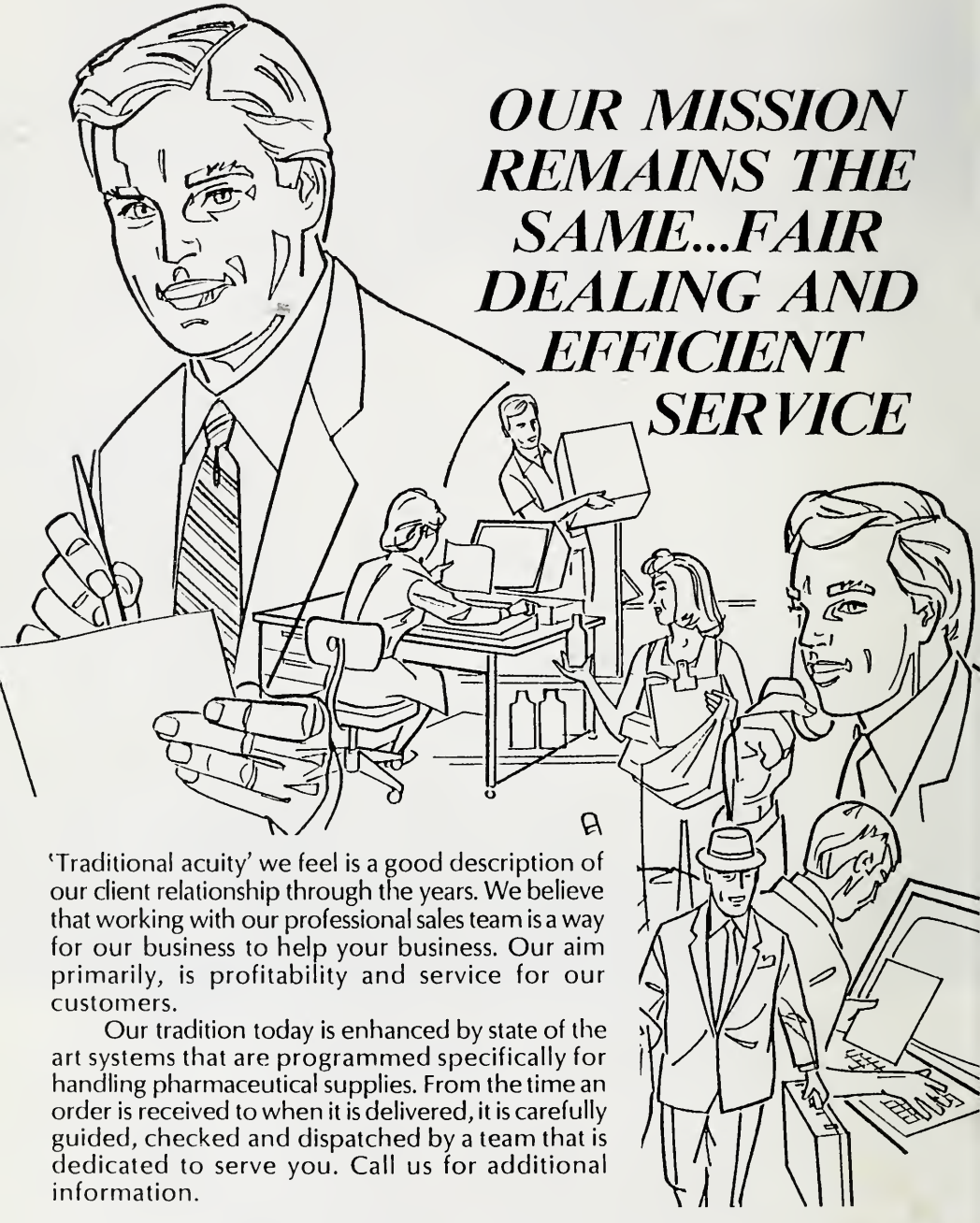
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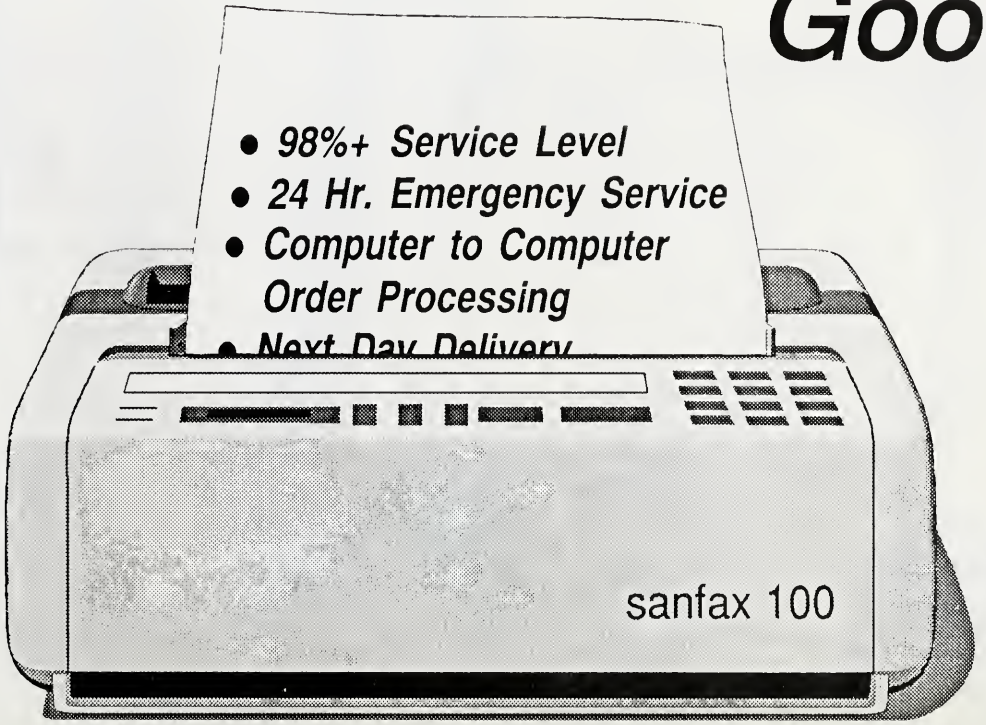
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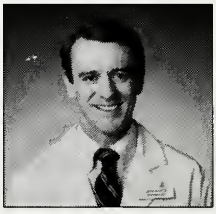
Important figures in diabetes care

7

Diabetes is the **No. 7** cause of death in the US[1]

1

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1. *Diabetes Surveillance, 1980-1987.* Atlanta, Ga: US Department of Health and Human Services, Division of Diabetes Translation; 1990: chap 3.
2. *Pharmaceutical Services for Patients With Diabetes.* Indianapolis, Ind: Eli Lilly & Company; 1987, 6-13.

WOMAN'S AUXILIARY FALL CONVOCATION

The 1991 WA Fall Convocation was held October 24 at the Institute of Pharmacy in Chapel Hill. A large group of members assembled from across North Carolina to be together to enjoy a time of fun, good food and useful information. By the end of the day, we all grew in togetherness as a group and in knowledge of the special health concerns we share as women.

We all grew in togetherness as a group and in knowledge of the special health concerns we share as women.

Neta Whaley gave our official welcome and Eloise Watts shared a meaningful invocation. Yvonne Brown had a roll call of members and the guests were all introduced. We thank everyone who brought a guest.

A workshop was conducted by Jane Moore of Buies Creek to teach us how to do Porcelain Petals baskets. We each completed a lovely basket to take home as a souvenir of a special day we all enjoyed.

Greetings were brought by both deans of our pharmacy schools, Tom Miya of UNC and Ron Maddox of CU. Dean Miya mentioned his impending retirement and his subsequent plans ("to do nothing for a while"). Dean Maddox told us of a three-story addition nearing completion at CU to provide more space for teaching, offices and research facilities.

Bill O'Quinn, 1st Vice President brought greetings from the TMA and Betty Dennis spoke on behalf of the NCPhA. As the first woman president in NCPhA history, Dr. Dennis told us of her special role and its significance. Dr. Dennis has been wonderfully supportive of the Auxiliary this year and it is through her efforts that we have set the first joint meeting of the NCPhA and the Auxiliary for our convention in Pinehurst. Our joint speaker will be Nancy Brinker of Houston, Texas.



Porcelain Baskets being painted by Yvonne Brown, Erie Cocolas, Caroline O'Quinn and Diane Moody. *photo by Qualex*



Many tables were filled with eager learners preparing baskets to be given for who knows what special occasions. *photo by Qualex*

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Committee reports were given by Jerry White, Vial of Life; Jean Morse, Ways and Means; Peggy Jackson, Membership and Tracey Smith, Lifesavers.

Auxiliary scholarships were awarded by President Suzan Maddox, assisted by Mescal Ferguson of Randleman. Mrs. Ferguson was



Dr. David Moore *photo by Qualex*

recognized for the contributions she and her late husband Howard have made to pharmacy education at both schools. Recipients were Paula Kirby, Kenly; Jana Jordan, New Bern; Michelle Transou, Greensboro; Chris Stotka, Chapel Hill; Allison Clippard, Alexis; Brenda Martin, Charlotte; and Philip Rodgers, Raleigh. Betsy Rogers Millar was present to say a few words about her mother, Lucile Swaringen Rogers, in whose memory two of our scholarships are dedicated. We all came away touched by Betsy's devotion to her mother.

Our luncheon at La Residence was blessed by Bess Garrett of Buies Creek, and enjoyed by all. The short-block walk was delightful due to the lovely weather and the fall leaves.

Maxine West did a fine job introducing our keynote speaker, David Moore, M.D., oncologist and gynecologist from N.C. Memorial Hospital, Chapel Hill. Dr. Moore spoke on women's health concerns as to regular testing with Pap smears and mammograms, as well as symptoms to watch for and monthly breast self-examination. He stressed that our health is our responsibility.

Betsy Mitchell, vice president of programs of the American Cancer Society, brought us information on all types of cancer through a multitude of excellent pamphlets. Betsy also stressed the availability of speakers from the ACS to any group, anywhere. Many members signed up to bring an ACS speaker to a group in their community. Cassandra Greene-Hines made us aware of a Mobile Mammogram Unit from N.C. Memorial Hospital that is available to come to any point within 250 miles to do screening of women over 35. The cost is $55, and after January 1, 1992 mammograms will be covered by insurance. Again, many of those present signed up to engage this service.

We dismissed with thanks to the persons making the day possible and especially the staff at the Institute. We vowed to be more diligent in protecting our own health and to endeavor to help other women too. Thanks to all who put their busy schedule on "HOLD" for awhile to be present for our Fall Convocation.

submitted by Suzan Maddox, president



Suzan Maddox, Woman's Auxiliary president *photo by Qualex*

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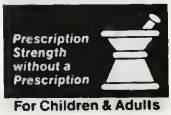
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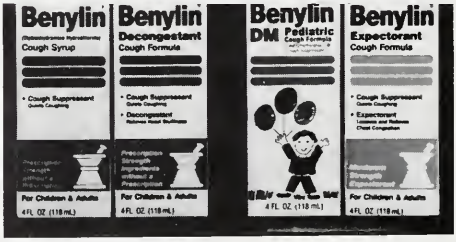
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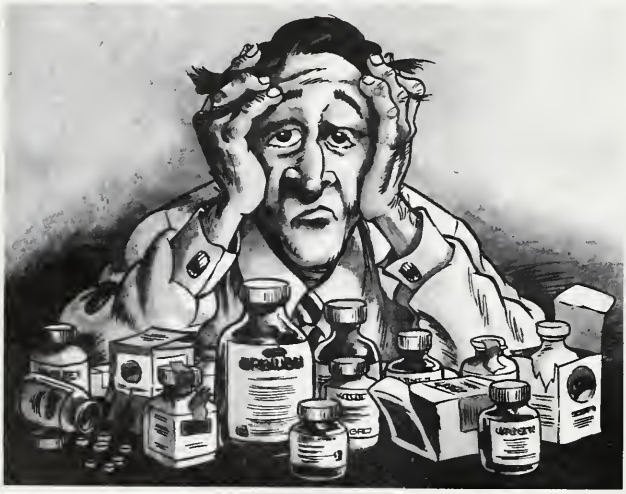
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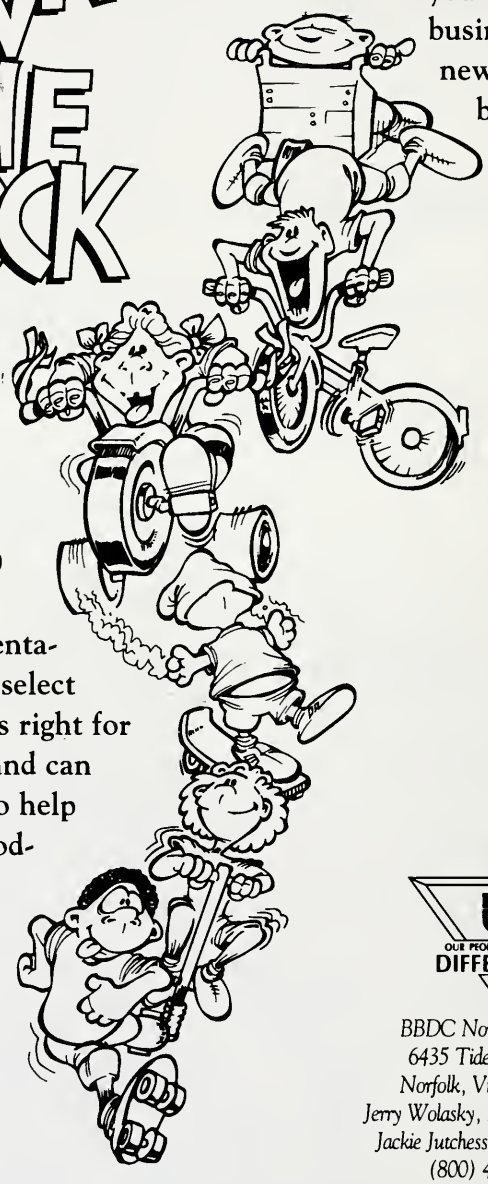
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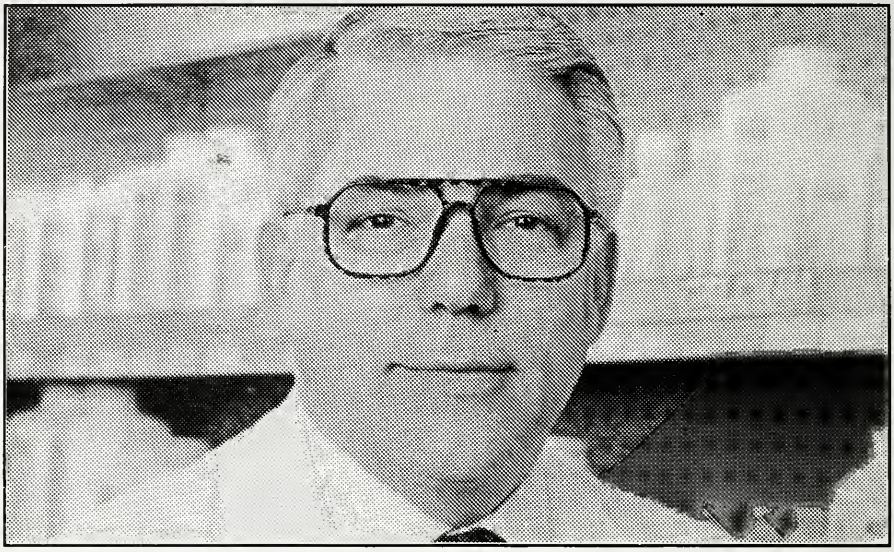
THE 1992 NCPHA PHARMACEUTICAL DIRECTORY

To be reviewed, checked for accuracy and retained for reference

This annual Pharmaceutical Directory is provided as a member service by the North Carolina Pharmaceutical Association. This is the fourth issuance of this directory and we try to improve each year on the accuracy and timeliness of the information. It contains many of the most frequently requested telephone numbers, addresses and other information about national, state and local pharmacy organizations, health care organizations, third party administrators and state and federal government offices.

NCPhA staff have tried to make this list accurate and complete, with the help of many members who provided information. We encourage you to review the directory and notify us at once with any more-current information or corrections. We also ask you to suggest additions to the directory for next year's issue. You can contact NCPhA Office at 800-852-7343, a toll-free number, another member service.

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MAIL-ORDER DEVELOPMENTS.

Three major developments on the mail-order prescriptions front took place in Washington as the capital was engrossing itself with the Thomas-Hill Affair.

In chronological order, the first of these was Medco's annual report to the Securities and Exchange Commission that disclosed the purchase of KSF Publishing Corp., which specializes in patient-oriented publications, in addition to others for physicians and pharmacists.

The power that this purchase gives Medco to begin a persuasive campaign among the three critical groups to widen the acceptability of mail-order dispensing - even as employer benefits programs are abandoning it - should not be under-estimated.

The second development was a four hour meeting with staff investigators of the Federal Trade Commission by members of the Long Island (NY) based Independent Buying Group, who brought documentary evidence of discriminatory pricing deals between mail-order firms and major drug manufacturers.

The Commission's Bureau of Competition thereby opened an investigation of the anti-competitive effects, and economic harm, of company policies that deny the same volume-based terms to independent retail pharmacies that are enjoyed by other "classes of trade" buying in the same quantities.

The third development was the filing of a FDA citizen's petition by yours truly, seeking new federal regulations that would (1) require mail-order prescription dispensing operations to maintain complaint files on the premises where they can be inspected by FDA, and (2) require such operations to immediately report to FDA any dispensing or mailing errors that create hazardous situations for patients.

These two requirements are already enforced by FDA on other regulated industries. My petition would preserve state regulation of the "pharmacy" aspects of mail-order dispensing while interposing federal regulation on the "industrial" aspects of it (i.e., on vast, mechanized volumes of end products moving in interstate commerce).

With respect to the FTC investigation, pharmacy can be grateful for the extraordinary dedication of the three IBG officers who used political "clout" to convince FTC to listen to them - I salute Fred Cohen, Mike Bouer, and Art Perlin.

Their efforts have pushed under FTC's desensitized nose a huge pile of documents showing price discrimination in practice, including misdirected invoices showing huge price breaks to "classes of trade" from which pharmacy buying groups are artificially excluded.

Among these invoices was one that caused a stir at last year's NARD convention in Nashville - an Abbott invoice to Medco's National Pharmacies mail-order subsidiary showing "For Hospitals Own Use Non-profit Institutions Act" discount prices.

At the time, Abbott claimed the invoice wording resulted from a computer error, and promised the same pricing to qualified independent pharmacy groups. But IBG told the FTC that Abbott reneged when they submitted a request for a bid.

IBG's inch-thick pile of documents included other misdirected invoices, hospital charge-back reports, and bid price sheets showing current price differentials for hundreds of products by many firms.

"Where did you get all this information?" asked FTC lead investigator Karen Bokat, amazed. "You'd be surprised how many dis-



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gruntled employees there are out there," answered Perlin.

As for my FDA petition - my second in three years aimed at getting effective, appropriate and uniform regulation of mail-order prescriptions - I was able to cite the industry's first public admission that its members do not obey all the laws and regulations of the states into which they ship their products.

This came in the Journal of Legal Medicine, 12: 257-265, this past summer, in an article by Washington attorney Thomas H. Stanton, J.D., and Delbert D. Konnor, Pharm.M.S., executive director of the American Managed Care Pharmacy Association. They said that such "regulatory burdens could cripple out-of-state pharmacies. A mail service pharmacy can comply completely with the pharmacy laws and regulations of any single state... (but) compliance with multiple and overlapping state requirements is burdensome to the point of being economically prohibitive..."

This came in reply to an earlier article by Gregory S. Munro, assistant professor of law, University of Montana, that reviewed all laws and regulations covering mail-order pharmacy nationwide. He concluded that these rules are "ill fitted to the task of protecting those to whom the industry dispenses."

Munro offered a stronger regulatory scheme for mail-order prescription drugs than a model now being promoted to its members by the National Association of Boards of Pharmacy. In particular, Munro's scheme provides for mandatory filing of Occurrence Reports on all hazardous incidents, injuries and accidents. "This type of provision," Munro's model says, "should be considered a necessity for the sake of allowing regulators a minimum notice of problems and some sort of empirical data on the safety of mail-order facilities and operations."

(When FDA surveyed six mail-order facilities pursuant to my earlier petition, Medco's Las Vegas plant refused to show complaint records, saying they had been sent to New Jersey headquarters.)

Replying to the Stanton-Konnor critique, Munro stated the obvious when he wrote: "Regulation of a 50-state interstate drug industry by only those states in which the mail-order industry chooses to locate its facilities may be courting a future disaster."

Having presented all this to FDA, I now await a hopefully more positive outcome than my first petition received (it sought full-scale federal regulation of the industry, and it was denied).

This feature is written and presented by Jim Dickinson on a grant from "Dickinson's Pharmacy—The Independent Voice," a professionally stimulating 8-page practical monthly newsletter, available from Ferdic, Inc., c/o Jim Dickinson, P.O. Box 228 Fairacres, NM 88033

The annual subscription fee is $45.00. The opinions and views expressed are those of the author and do not necessarily reflect those of the North Carolina Pharmaceutical Association.

JOYNER NAMED PRESIDENT OF PHARMACY FOUNDATION OF NC

Pamela U. Joyner, clinical associate professor of the UNC School of Pharmacy and director of the Wake Area Health Education Center was installed November 7, 1991 as president of the Pharmacy Foundation of North Carolina, Inc. Joyner succeeds Ralph P. Rogers Jr. of Durham, who had served as president for twelve years.

Established in 1946 as the North Carolina Pharmaceutical Research Foundation, the foundation assists the UNC School of Pharmacy in its research, education and public service activities. A 24-member board of directors represents many facets of the profession of pharmacy. Joyner served on the board from 1986 to 1990.

Joyner received her B.S. in Pharmacy degree in 1974 and her M.S. in Pharmacy degree in 1977, both from UNC-Chapel Hill. She has served on the Executive Committee of the North Carolina Pharmaceutical Association and as 1988-89 president of the North Carolina Society of Hospital Pharmacists. She was recognized in 1985 as the Wake County Pharmacist of the Year.



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PHARMACY LAW CAPSULE

by James A. Boyd, Pharm.D., M.B.A.
Assistant Professor,
Department of Pharmacy Practice
Campbell School of Pharmacy



James A. Boyd

PARTIAL FILLING OF PRESCRIPTIONS FOR CONTROLLED SUBSTANCES

Partial filling of a prescription is when the patient receives a smaller quantity of medication than was ordered by the prescriber. Most pharmacists are very familiar with the 72 hour "window" for filling the balance of a prescription drug for a Schedule II. The Controlled Substance Act permits the pharmacist to partially fill a prescription for a Schedule II medication and allows for the dispensing of the balance within 72 hours. If the remaining portion is not filled within 72 hours, the pharmacist must notify the prescriber. A new prescription from the prescriber must be obtained before additional medication can be supplied to the patient.

The Act has special provisions for partial filling of Schedule II prescriptions for Long Term Care Facility (LTFC) and Terminally Ill patients. As discussed in the July 1991 issue of the *NC Board of Pharmacy News,* the Drug Enforcement Administration amended section 1306.13 on July 3, 1991, which affects the partial filling of prescriptions for LTCF and Terminally Ill patients. Partial filling may occur if:

1. the prescription is written for a resident of a LTCF or has a documented terminal illness. (If the pharmacist is uncertain about the patient status, he or she must verify if this provision applies with the prescriber before the prescription can be partially filled.)
2. the pharmacist determines additional medication is necessary.
3. the prescription is marked with "Terminal Ill" or "LTCF Patient". (The pharmacist is responsible for recording this information on the prescription and an omission is a violation of the Act.)
4. the partial filling is recorded appropriately. (Computerized record keeping systems may be permissible if specific conditions are met; for specific information see the July 1991 NC *Board of Pharmacy News,* item 690.)
5. dispensing does not occur 60 days after the date for which the prescription was issued.

The Act also covers prescriptions for Schedules III and IV (S1306.23). Partial filling is permitted when:

1. the partial filling is recorded in the same manor as refilling.
2. the total quantity dispensed in all partial fillings does not exceed the total quantity prescribed (quantity of original prescription plus the sum of the total quantities of the refills).
3. dispensing does not occur 6 months after the date for which the prescription was issued.

For example, a new prescription is for Propoxyphene N 100 #10 with five refills. This prescription may be filled six times with a quantity of 10; 12 partial fillings of five tablets; or any other combination as long as the total number of tablets dispensed does not exceed 60 tablets within the six month time frame. The Act does not specifically address Schedule V Controlled Substances. It would appear partial filling of a prescription for Schedule V medication would be permissible, provided the total quantity does not exceed the sum of the quantities of the original prescription plus the refills. (Controlled Substances Act § 1306.13 and 1306.23.)



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CORRESPONDENCE COURSE

UPDATE ON SUNSCREENS: PART I



Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio



J. Richard Wuest, R.Ph., Pharm.D.
Professor of Clinical Pharmacy
University of Cincinnati
Cincinnati, Ohio

Goals

The goals of this lesson are to

1. discuss potential skin damage from ultraviolet (UV) radiation with special reference to UVA rays; and

2. report contemporary information relevant to OTC sunscreen products.

Objectives

At the conclusion of this lesson successful participants should be able to:

1. exhibit an understanding of the various subclassifications of ultraviolet light and whether they tan or burn;

2. identify causes of photosensitivity reactions and the variables that influence sunscreen product efficacy; and

3. distinguish between physical sunblocks and chemical sunscreens and their advantages and disadvantages.

Overview of Sunscreens

Many Americans consider tanned skin to be beautiful and healthy. Some have an obsession for sun bathing and spend considerable time in tanning parlors or booths.

During the past several decades, demographic data and direct results of experimentation have uncovered information negating the belief that unlimited exposure to solar rays is healthy. Even short exposures to the sun can harm normal skin. The chronic effects of overexposure are cumulative and persist throughout life.

Recent evidence also implies that ultraviolet A radiation (UVA) is much more devastating than previously believed. Sun exposure is implicated in causing more than 40 dermal and systemic disorders. The most detrimental outcome of prolonged exposure to solar radiation is cellular death.

A wide variety of photoprotection products, which help shield the skin against sun-induced damage, are available OTC. Most sunscreen products are purchased in pharmacies. Since there is considerable misconception about them, a goal of this lesson is to explain the basis for correct usage of OTC sunprotection products.

Part II of this series will conclude the topic, concentrating on sunscreen products.

Solar Spectrum, Tanning and Burning

The solar spectrum of sunlight ranges from 200 to 1800 nanometers (nm). One nanometer is 10^{-9} meter. The higher wavelengths consist of infrared, x-rays, radio and others down to the visible colors. The range that is involved in sunburn and tanning are the lower wavelengths - 200 to 400 nm. These are called ultraviolet, and are further divided into ultraviolet A, B and C (UVA, UVB, and UVC). UVC is 200 to 290 nm, UVB 290 to 320 nm, and UVA 320 to 400 nm.

A common method for labeling these subdivisions is that UVC can cause the most damage and is cytotoxic. It is also called "germicidal" ultraviolet light. UVC can be carcinogenic to human cells, but almost all UVC produced by the sun is filtered out by the ozone layer of the atmosphere.

UVB is more burning than tanning. Again, most UVB is filtered out by the atmosphere. Also, the goal of traditional sunscreens has been to block UVB from reaching the skin, but allow the UVA tanning rays to get through.

UVA is more responsible for tanning than burning, although it does contribute to sunburn. Briefly, a tan occurs because UVA stimulates melanocytes at the base of the epidermis to produce the pigment melanin. Melanin is the body's mechanism to prevent extensive damage to the dermal layer of skin. Each person has a limit to the amount of pigment that can be formed, and when this is exceeded, sunburn results.

Table 1

Representative Drug/Chemical Agents that Cause Photoallergic Reactions in Association with UVA

Group	Compounds	Sources of Exposure
Halogenated salicylanilides and related compounds	Tetrachlorosalicylanilide, dibromosalicylanilide, bithionol, jadit	Antibacterial and antifungal agents in soaps, shampoos, and cosmetics
Phenothiazines	Chlorpromazine, promethazine	Tranquilizers and anthihistamines
Fragrances	Musk ambrette, 6-methylcoumarin	Ingredients in after-shave lotions and sunscreens
Sunscreens	PABA and its esters, benzophenones, digalloyl trioleate dibenzoylmethanes	Sunscreening agents
Miscellaneous	Stilbenes, diphenhydramine, thiazides, sulfonamides, sulfonylureas, plants of the compositae family, griseofulvin	Whiteners and brightening agents in bleaches, antihistamines, photochemotherapeutic agents, diuretics and oral hypoglycemic agents

Sun-Related Damage

Both UVA and UVB cause photosensitivity reactions. As stated earlier, there are approximately 40 sun-related disorders. Those that will be discussed in this article are photosensitivity, photoaging, and skin cancer.

UVB is more harmful than UVA in provoking destructive cutaneous changes. But since most UVB is absorbed by the atmosphere, that which reaches the skin is primarily absorbed in the epidermis.

UVA penetrates more deeply into the dermis and is therefore more likely to promote cellular damage, photoaging, photosensitivity and cancer. UVA is now known to be more potentially harmful than UVB, and is a major risk factor for promoting damage to the skin and its supporting tissues. An important point is that ultraviolet lamps used for tanning emit up to 95 percent UVA radiation and are considered more dangerous than periodic, moderate sunbathing.

Photosensitivity Reactions

Certain chemicals and drugs that, by themselves, are not injurious to the skin, can incite undesirable photosensitivity reactions when exposed to ultraviolet radiation. The term photosensitivity includes photoallergy and phototoxicity.

Photoallergy. Most drug/chemical photosensitivity reactions are provoked by exposure to wavelengths in the UVA range. The reaction is an immunological response that occurs when a photosensitizing chemical (photoallergen) present in or on the skin absorbs radiant energy and prompts the production of antibodies. Following subsequent exposure to the photoallergen and ultraviolet light, an allergic response occurs. It has been reported that as little as twenty seconds exposure to ultraviolet radiation can initiate a reaction in a sensitized person.

The photoallergic response is more likely to occur with topically applied drugs than with systemic agents. The outcome resembles eczema with discreet eruptions. Edema and vasodilation are common. Lesions may occur within minutes of exposure, or a day later, and extend into non-exposed areas, sometimes covering a large part of the body. Photoallergy occurs less often than phototoxicity. Known photoallergens are listed in Table 1.

Phototoxicity

Phototoxicity is more common than photoallergy and involves a non-immunological response to chemicals (Table 2) and ultraviolet light. They can affect anyone. Phototoxic reactions result when an offending chemical is combined with ultraviolet light. An exaggerated sunburn results with a greater than expected reaction for the length of time exposed. Dermal manifestations usually occur 5 to 18 hours after sun exposure and peak 36 to 72 hours later. They may also be delayed for hours or days. Unlike photoallergy, phototoxic reactions are confined to the site of exposure to ultraviolet light.

Phototoxic reactions can appear following exposure to the sensitizing chemical, either systemically or topically. Some require multiple exposures to produce the response. Following discontinuance of exposure to the chemical or ultraviolet radiation, cutaneous manifestations may persist for months to years. UVA is believed to cause a greater degree of phototoxic reactions than UVB.

Photoaging

Photoaging broadly describes biochemical and cellular skin changes that occur with continued exposure to sunlight and result in premature aging. UVA radiation is the primary cause. Photoaged skin appears dry and scaly, leathery, yellowish and deeply wrinkled and blotchy.

Photoaging is not merely an acceleration of the normal aging process. Whereas with normal aging the skin becomes thinner because of loss of subcutaneous tissue, photoaged skin thickens due to epidermal hypertrophy. Individuals with fair skin, persons residing in sunny climates, and those exposed to sunlight for extended lengths of time (such as farmers and construction workers) are most susceptible.

Animal studies have demonstrated that UVA is a primary cause of photoaging. Since UVA

penetrates more deeply than UVB, it damages underlying connective tissue in the dermis. The photoaging process results from overexposure, so prophylaxis against ultraviolet rays should continue consistently throughout life.

Skin Cancer

Prolonged or even intermittent exposure to ultraviolet light is reported to be the primary cause of skin cancer, accounting for up to 90 percent of clinical cases. The problem appears to be mediated by UVA, which, on penetrating into the skin, interferes with DNA and RNA synthesis leading to mutated cells which can become malignant.

Individuals at high risk for skin cancer include those with outdoor occupations, fair-skinned Caucasians who easily sunburn, those who live in southern climates, persons with numerous unusual moles, and those genetically predisposed such as albinos.

The three most prevalent forms of skin cancer are basal cell carcinoma, squamous cell carcinoma and malignant melanoma. The first two are more prevalent (as many as 400,000 and 100,000 victims affected annually) than the latter, in which only 25,000 to 28,000 persons are affected yearly. However, malignant melanoma is the most serious form. If it is undiagnosed and untreated, it can penetrate deeply into the skin and metastasize to other areas of the body.

Malignant melanoma begins as a light brown to a black, flat, sometimes mottled blemish with irregular borders. The initial lesion is usually about one-fourth inch in diameter which then expands in size. It can change colors with bright blue and red being reported, and may crust on the surface and bleed. The most common sites of occurrence are the trunk, upper back, lower legs, neck and head. Deaths from this serious form of skin cancer are increasing at a rate of 4 percent a year. More than 6,000 Americans die of melanoma annually.

Basal cell carcinoma (the type President Reagan had) begins as raised opaque, pearl-colored nodules. These neoplasms grow slowly and can invade the underlying structures. However, they do not spread to other organs. Left untreated, these cancers can crust, form ulcers and bleed. The most common sites of occurrence are the face, neck, head, hands and trunk of the body.

Squamous cell carcinoma lesions begin as raised pink to red, translucent nodules that occasionally appear like warts. As they grow they sometimes develop into large tumors that resemble mushrooms. More advanced tumors ulcerate and bleed. The most common site for occurrence is the face, lips, ears, hands and arms.

Detected early, surgical removal of thin melanomas will cure most affected persons. With basal cell and squamous cell carcinomas, early detection and removal reportedly cures 95 percent of all cases. This points out the need and advisability of constant observation for the beginning of these lesions in highly susceptible persons.

Sunblocks and Sunscreens

In addition to completely avoiding the sun or wearing protective clothing when outdoors, applying sunscreens or sunblocks can prevent ultraviolet light from reaching the skin.

Physical Sunblocks. These are chemicals which, because of their opaqueness, reflect and scatter up to 99 percent of light in both the ultraviolet and visible spectrums. Physical sunblocks include red petrolatum, titanium dioxide, and zinc oxide. They are ideal for use on localized sunsensitive areas, such as the nose, lips, and ears to augment chemical sunscreen agents. Their effectiveness depends on the thickness of application.

Sunblocks are messy to use and generally cosmetically unacceptable for application over large areas of the body. The current fad is to color them with bright fluorescent shades.

Chemical Sunscreens. FDA considers sunscreens to be drugs, rather than cosmetics, because "they are intended to protect the structure and function of the human integument (skin) against actinic (sun-induced) damage.

Chemical sunscreens differ from sunblocks in their mechanism of action. Sunscreens absorb various wavelengths of light and thus keep them from penetrating into the skin. A

Table 2
Representative Drug/Chemical Agents that Cause Photoxic Reactions in Association with UVA

Group	Compounds	Sources of Exposure
Aminobenzoic derivatives	PABA, glyceryl PABA, amyl acid (PABA) and dimethylaminobenzoate	Sunscreens, UV-cured inks
Benzofurans	Amiodarone	Antiarrhythmic therapy
Coal tar	Anthracene, acridine, fluoranthene, pyrene, benzpyrene	Psoriasis and eczema therapy
Furocoumarins	Psoralen, 5-methoxypsoralen, 8-methoxypsoralen	Photochemotherapy, perfumes, plants
Hypericum (St. John's wort, buckwheat)	Hypericin	Cattle feed, herbal medicines
Nalidixic acid	Nalidixic acid	Urinary antiseptic
Nonsteroidal anti-inflammatory drugs	Piroxicam	Anti-inflammatory agent
Penicillium compounds	Griseofulvin	Antifungal therapy
Phenothiazines	Chlorpromazine, thioridazine, promethazine	Tranquilizers, antihistamines, insecticides, anti-nematode agents
Retinoids	Etretinate, isotretinoid, tretinoid	Acne and psoriasis therapy
Sulfonamides	Sulfanilamide, sulfacetamide, sulfadiazine, and others	Antimicrobial therapy
Tetracyclines	Demeclocycline, methacycline, oxytetracycline, doxycycline, tetracycline	Antibiotics
Thiazides and related drugs	Chlorothiazide, hydrochlorothiazide, furosemide	Diuretics

sunscreen's absorbance defines the specific wavelengths that are absorbed. Transmission refers to the wavelengths that are not absorbed, but pass through the sunscreen layer to underlying skin.

Sunscreens are subdivided into two groups: those that mainly absorb UVB, and those that primarily absorb UVA. It has long been known that most sunscreens provide little protection against UVA.

Aminobenzoic acid and its esters, the cinnamates, and the salicylates primarily absorb UVB. The benzophenones and anthranalates confer partial protection against UVA damage. Butyl methoxydibenzoyl methane protects against the entire UVA range. Sunscreen products that filter out both UVB and UVA are termed full-spectrum or broad-spectrum sunscreens. A combination of two or more sunscreens is often used in products to extend protection over a greater range of ultraviolet radiation wavelengths.

There are many reasons to support using a full-spectrum sunscreen. Foremost is that UVA-induced photodamage is cumulative. Further, outdoor lifestyles, use of tanning parlors, the natural tendency to prolong exposure to UVB because of the use of high SPF-value sunscreens, and wide use of photosensitizing drugs and chemicals that cause reactions when combined with UVA radiation are all reasons to maximize protection against sun radiation with full-spectrum sunscreens.

Susceptible Skin Types

FDA has identified six skin types based on genetically determined responses to sunlight. These range from very fair (Type 1) to heavily pigmented (Type VI) skin. The need for photoprotection correlates with these skin types. Individuals with fair skin and blue eyes, with or without freckles, who burn easily and tan poorly (Types I and II) should use a sunscreen with an SPF of 15. People who burn moderately or minimally and tan well (Types III and IV) should use a product with an SPF of 6 to 10. Those who rarely or never burn (Types V and VI) require minimal protection and can select a product with an SPF of 2 or 4, or use none at all.

Sun Protection Factor

The sun protection factor (SPF) is the standard means to express sunscreen efficacy. It is the ratio of the minimal erythema (redness)-causing dose (MED) of UVB (or the minimal amount of UVB that produces uniform redness 24 hours after exposure of sunscreen-protected skin) to the MED of unprotected skin. SPF quantifies the degree of erythema reduction conferred by a particular sunscreen.

Expressed practically, the SPF value is the relative length of time (NOT HOURS!) an individual can be exposed to UVB when a sunscreen is applied, compared to when it is not used. An SPF value of 15 means that a person can be exposed to UVB 15 times longer with sunscreen protection than without it. SPF values aid consumers in choosing the ideal product for their personal use.

Several products claim to have SPF values higher than 15. An SPF 15 sunscreen absorbs more than 93 percent of UVB radiation. FDA is investigating whether products with higher SPF numbers have improved value over those with the 15 value.

Phototoxic Protection Factor (PPF)

Currently there is no standardized method for describing sunscreen protection activity against UVA. The phototoxic protection factor (PPF) is one reference which any be of value for this purpose. It is gaining considerable support.

PPF values indicate a sunscreen's UVA-blocking efficacy. The value is obtained similarly as the SPF, with one exception. A delayed erythema is induced by calculating the minimal phototoxic dose (MPD) of UVA radiation in association with a topical or oral phototoxic drug such as 8-methoxypsoralin. The MPD is the minimal quantity of UVA that will induce a uniform redness after exposure to sunlight. The clinical significance of the PPF value is that persons who take or use photosensitizing drugs listed in Tables 1 and 2 and those concerned about photoaging, skin cancer, and other photodermatoses, could use this scale to select their sunscreen because they are especially sensitive to UVA radiation.

There is some controversy associated with

the measurement of photoprotection against UVA. The PPF ratio described above was submitted to FDA by Herbert Laboratories, manufacturer of Photoplex, via the new drug application (NDA) process. Therefore, FDA has reviewed and approved this designation, and will permit Herbert Laboratories to make claims about Photoplex protecting against UVA, and being a broad-spectrum sunscreen.

Other manufacturers are making similar claims, however, and one has provided FDA with data distinguishing the damaging effects of subunits of UVA. That manufacturer claims that the 340-400 nm UVA wavelengths cause a different degree of damage than the 320-340 wavelengths. It has subdivided UVA into UVA I for the former, and UVA II for the latter, and has devised a "UVA protection percent number."

In a feedback letter to the industry in May, 1990, FDA objected to "broad-spectrum" claims for sunscreens (except for Photoplex, which has an approved NDA) on the basis that a testing standard has not yet been adopted to support claims for both UVA and UVB protection, unless, of course, the manufacturer has filed a new drug application - the process Herbert Laboratories followed.

In another interesting announcement, FDA stated that it expected to address UVA in the Tentative Final Monograph for OTC sunscreens due to be published in late 1990, but not to the extent and scope that industry expected. This is because there has been an extended time lag in the OTC review process. FDA is now commenting on a review of marketing conditions up to 1975, and data that have come to light since then will not be acted on for at least another two years.

Part II

This lesson will be continued with Part II. Topics include a discussion of specific sunscreen agents and OTC sunscreen products with special reference to blocking UVA, and counseling advice for consumers.

A professional development program made possible by an educational grant from

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CORRESPONDENCE COURSE QUIZ

Sunscreens: Part I

1. The form of ultraviolet light that is referred to as "germicidal is:
 a. UVA.
 b. UVB.
 c. UVC.
2. All of the following statements about photoallergy are true EXCEPT:
 a. it is an immune response.
 b. it prompts the production of anti bodies.
 c. it is more prevalent than photo toxicity.
 d. it occurs more often with topically applied drugs than with systemic drugs.
3. The type of ultraviolet light-induced skin disorder that most resembles eczema, with discreet eruptions and local edema and va sodilation, sometimes covering a large part of the body is:
 a. photoaging.
 b. photoallergy.
 c. phototoxicity.
 d. skin cancer.
4. The subdivision of ultraviolet light that is more responsible for tanning than burning is:
 a. UVA.
 b. UVB.
 c. UVC.

5. All of the following are physical sunblocks EXCEPT:
 a. padimate O.
 b. red petrolatum.
 c. titanium dioxide.
 d. zinc oxide.

6. Each of the following terms and definitions is correct EXCEPT:
 a. absorbancy defines the specific wavelengths of ultraviolet light that a sunscreen absorbs.
 b. PPF values indicate the UVA-blocking efficacy of a sunscreen.
 c. transmission defines the wave lengths of ultraviolet light that pass through a sunscreen and reach the skin.
 d. SPF values indicate the num-ber of hours that the user can stay in the sun without burning.

7. The wavelength spectrum for the UVB portion of ultraviolet light in nanometers is:
 a. 200-290.
 b. 290-320.
 c. 320-400.
 d. 400-430.

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Sunscreens: Part I

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Please circle correct answer

1. a b c	4. a b c	7. a b c d
2. a b c d	5. a b c d	8. a b c d
3. a b c d	6. a b c d	9. a b c
		10. a b c

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8. All of the following statements about phototoxicity are true EXCEPT:
 a. it results when an offending chemi cal is combined with ultraviolet light.
 b. it resembles an exaggerated sun burn.
 c. it is believed to be more likely caused by UVA than by UVB.
 d. it occurs on both exposed and non-exposed areas of the body.

9. The type of skin cancer that occurs most commonly, and is characterized by raised opaque, pearl-colored nodules is:
 a. basal cell carcinoma.
 b. malignant melanoma.
 c. squamous cell carcinoma.

10. The subdivision of ultraviolet light that reaches the skin and penetrates more deeply into the dermis than the other two types is:
 a. UVA.
 b. UVB.
 c. UVC.

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The successful candidates in the mail ballot for officers of the North Carolina Society of Hospital Pharmacists are:

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Continued next page

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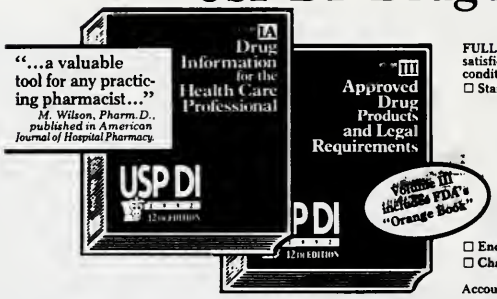
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